should be from a $\frac{1}{8}$ to $\frac{1}{4}$ of an inch in diameter, and the puncture should be made in an upward direction, but at the external edge of the patella. When the joint is emptied, a little styptic colloidion is painted over the puncture, a small pad of antiseptic gauze or lint placed over, and the whole joint evenly strapped up. The leg should be bandaged, and, if thought necessary, an ice-bag is applied to the joint, and the limb, for a day or two, kept at perfect rest, by the application of poroplastic splints. Mr. Jessop has practised aspiration successfully in pyæmic abscess of the hip- and knee-joints, and has also reported cases of pneumatic aspiration in ordinary dropsy of the knee-joint. In cases of fractured patella, with either effusion of serum or blood, Mr. Christopher Heath has now, for some time, practised emptying the joint by aspiration before putting up the fracture; in this way, he has obtained most happy results.

Abscesses.—Deep abscesses of the thigh or ilium, lumbar and psoas abscesses, may all be well treated by aspiration.

[Mr. Jessett exhibited and gave a demonstration of an aspirator suggested by him, and manufactured by Messrs. Maw, Son, and Thompson, London, which, from its extreme simplicity and moderate price, may be in the hands of any practitioner.]

Dr. FINNY (Dublin) confined his remarks to the treatment of purulent or seropurulent effusions in the thorax. In his experience, the best method was to give free vent, under due antiseptic precautions, by incision, to the fluid, which, so long as it remained, was a source of danger to the patient. Never having employed Dr. White's instrument, he had no intention to criticise adversely Dr. White's method of tapping the empyema, and by the siphon method draining it off before he resorted to incision. He protested, however, against the indiscriminate employment of washing out the pleural cavity with antiseptic fluid; as, unless the fluid were of a dangerous strength, it could do little or nothing as an antiseptic, and cases were on record of patients having evidenced toxic symptoms, due to the carbolic acid, the antiseptic employed.

Dr. GRAY (Castlewellan) agreed in the main with the remarks of Dr. Finny, that there was very little danger, with proper precautions, in opening the chest at once when it was ascertained that the effused fluid was pus, introducing a drainage-tube, and washing out the cavity. As an easy mode of introducing the tube, he recommended a common uterine sound to be introduced through the enlarged needle-hole, and pushed on until its point projected between two of the ribs, where it could be cut down upon, and pushed through. Upon this point, the drainage-tube could be drawn and tied; then, by withdrawing the sound, the tube could be brought out through the needle-hole, and the two ends could be tied together. Through this tube the pus drained, and through it the antiseptic fluid could be injected.

Dr. CULLIMORE (London) said that, owing to the limited time at his disposal, he would direct his observations to the treatment by aspiration of hepatic abscess. At the present time, and also during his service in India, he had considerable experience in the use of aspiration. Soon after its introduction, it was largely used; but he thought that its early gained success was not attended with the good results anticipated. When the abscess was deep in the substance of the liver, and the diagnosis was doubtful, then, after the lapse of some time to clear up the case, the aspirator might be used, sometimes with success, both as a method of cure, and as a means of diagnosis. When the diagnosis was certain, and the abscess pointed towards the surface, after a certain time being allowed for formation of adhesions, the best method was either to use a trocar and cannula, or even incision, with anæsthetic precautions. The objections to the use of the aspirator were that, from its great suction-power, it was liable to break down the walls of the abscess, and so increase the danger of the spread of the disease. As a means of diagnosis, in obscure cases, exploratory puncture should always be made. It could be done with safety, and contributed greatly, by clearing up the diagnosis, to the peace of mind of the patient.

Dr. WHITE, in reply, stated that several of the speakers had misunderstood him, owing to his having been unable to go thoroughly into the subject from lack of time. He was anxious to correct the misapprehension into which Dr. Finny and Dr. Gray had fallen, as to the statement that air, entering the pleura after antiseptic precautions, was injurious. This was not only not the case, but, as was well known, the introduction of air, rendered aseptic, had frequently been used, and without bad results. Again, Dr. Finny thought that pus was left in the pleura. On the contrary, irrigation was to be performed by alternate injection and removal of the antiseptic solution, until what returned was quite free from pus; therefore, what was left behind was merely an antiseptic solution. Carbolic acid either should not be

used, or, if employed, it should only be in the strength of 2 or 3 per cent. Numerous other solutions were to be preferred.

VISIT OF THE EGYPTIAN CHOLERA EPIDEMIC IN 1883 TO PORT SAID.

Read in the Section of Public Medicine.

By GILBERT KIRKER, M.D., Surgeon, R.N.

I HAVE thought that a consideration of the fact that, during the late epidemic of cholera in Egypt, the disease made only eight victims in Port Said, a filthy town with 17,000 inhabitants, would be of sufficient interest and importance to bring under the notice of this Association.

I shall first give a brief description of Port Said, more particularly with reference to its sanitary condition at the time of the appearance of the cholera; then a short history of the outbreak and the measures taken to combat it; and, finally, I will state what I consider to be the cause of the comparative immunity of Port Said, and what were the essential factors in the generation of the epidemic in Egypt.

From the Damietta mouth of the Nile to the Gulf of Pelusium, there stretches, separating Lake Menzaleh from the sea, a narrow strip of sand from two hundred to three hundred yards broad. This strip of sandy beach, at a point thirty miles from Damietta, and the ground made by throwing the dredgings from the harbour into the shallow lake, form the site of Port Said. The surface is flat, and only from four to five feet above sea-level. The soil is composed of sand, whitish in colour where dry and exposed to the weather, greyish lower down, and, at the water-level, almost black. The subsoil-water is saline, and its height varies considerably, being affected by the height of the water in the sea and lake.

Port Said consists of two towns, one inhabited by Europeans, and the other by native Egyptians. The former is situated close to the western side of the harbour, and the latter a short distance beyond.

To the north-east of the towns is the beach, a strip of sand about two hundred yards broad, intervening between the sea and the houses. On the opposite side, towards the south-west, the waters of Lake Menzaleh approach closely. The European town is fast extending towards the west, but there is still a piece of unoccupied ground, about one hundred yards broad, separating the last European from the first Egyptian houses.

In the European town the streets are broad, and run from north-east to south-west, and north-west to south-east, intersecting each other at right angles. The houses may be divided into three classes: 1st, those built by private individuals according to the regulations of the domaine contained in the contract of ground purchase; 2nd, those built by the Canal Company for its workmen; and 3rd, those built by the Greek colonists on the ground belonging to the Hellenic government.

The houses of the first class have at the basement a cellar and stand two or three stories high. The cellars are all badly ventilated, their floors are about five feet below the level of the ground, and, as would be expected, all are damp, while some are constantly flooded with water. Two of the conditions in the contract which the builders of these houses have to sign are "to construct a suitable cesspool, and empty it regularly," and "to construct a drain-well for the reception of the refuse-waters, which waters are, in no case, to have access to, nor be emptied, on the public streets." In conformity with these unsanitary regulations, each house has its cesspool and drain-well. The cesspool is constructed in the cellar, and receives all that enters by the water-closets in the upper stories. Most of the cesspools are closed in with masonry, but many are open. Some only are cemented inside, nearly all of them leak, and none of them are properly ventilated. The drain-wells do not exist universally in connection with these houses, as some have been filled up on account of their inconvenience or unsightliness; but where they do exist, their use brings about the saturation of the soil with foul water, and adds to the dampness of the cellars. Where there are no drain-wells, the water is poured into the cesspools, thrown into the cellars, or into the public streets. These different circumstances unite to make the cellars fearfully unwholesome places. They are damp; the floors of some are covered with water, which has entered from below, or leaked from the drain-wells and cesspools; they are the receptacles for dirt and filth of all sorts; in some of them are loathsome open cesspools, and all are badly ventilated if ventilated at all. The noxious exhalations from them ascend into the rooms above, where the people live, enter the adjoining houses, and in the open streets can be felt emerging from the cellar-openings.

The houses of the second class, those built by the Canal Company for their workmen, have a cellar, and stand one story high. The cellar is damp, its floor is often covered with water, and it is either unventilated, except by the door, or there is, in addition, a small window. Most of these cellars are inhabited; and, as one looks at the poor people living in their underground darkness and dampness, he wonders how the Canal Company could have built, and how they can compel their servants to live in, such uncomfortable and unhealthy houses. These houses have no private cesspool or drain-well, and their occupants have to use public ones.

The houses of the third class, those of the Greek Colony, retain much of the ancient national style. They are one-storied buildings, with no cellar, and have a single row of rooms from front to back. The outer doors and those between the rooms are all in one straight row, which from the outside looks like a passage piercing the house. The central rooms are necessarily dark and badly ventilated. In connection with these houses, there was no arrangement whatever for collecting the excrement and house-refuse; everything found its way to the ground round about them.

The streets in the Egyptian quarter, or Arab Town, are fairly broad, and they run in the same direction, and cross each other in the same manner, as those of the European town. The houses are nearly all built of wood, and, as a rule, are one or two stories high. In many localities, they are extremely close together; for although, in the growth of the town, the streets marked off on the plan have been preserved clear, yet, owing to no limit being placed to the smallness of the houses, many of the rectangular spaces between the streets are covered with orderless masses of small huts, penetrated by narrow winding passages. The population is, therefore, very dense—over 500 to the acre. The air cannot circulate freely round the houses, and the narrow crooked passages are the ready receptacles for dirt.

Part of the site of the Arab town is very low. In summer, the subsoil water here is from one to two feet below the surface; but in winter, when the waters of Lake Menzaleh are raised on the north-east shore by the prevailing south-west winds, much of the surface is below the water.

The two-storied houses with two rooms, and the one-storied houses with one room, may be taken as the types of the Egyptian habitations at Port Said. In the former, the family live on the first floor, while the ground apartment serves as the entrance-hall, the kitchen, the fowl-house, the stable for any domestic animal, and in a dark corner of it is the cesspool. Its floor, as a rule, is not boarded, and generally it has no window. It is a dark, damp, foul place, and in free communication with it is the dwelling-room above.

The one-storied, one-chambered, houses are very small; their floors may or may not be boarded, and they have no window, or only a small one. They seldom, however, contain cesspools.

Entire want of ventilation is prevented in the Arab houses by the rough manner in which the boards forming their walls are put together. At night, when the lamps are lighted within, the light shines through at every seam.

The cholera at Port Said confined itself to the Arab town, and most of the cases occurred on the lower ground, but it did not seem to show a preference for any particular kind of house.

The Egyptian house water-closet is a cesspool dug in the floor, and covered with a board. It often remains a long time unemptied, its fluid contents soak into the ground all round, and its presence is nearly always recognisable outside from the smell that rises from the saturated ground in its vicinity. At the time of the outbreak of the epidemic, of the 16,000 inhabitants of this quarter, some used these filthy water-closets; some six public latrines to the south-east of the town; and the remainder, by far the greater number, the neighbouring unoccupied spaces of ground. The excreta temporarily collected in houses without water-closets were thrown into the streets.

The only organisation which existed for the essential and important work of scavenging was the *voirie*, and it confined its operations within narrow limits. The extent of its functions was to repair, clean, and water the public streets, and to empty the few public latrines and those of the Government establishments. The clearing out of cesspools in private houses, the removal of domestic refuse and slop-water, were left to the care of the householder. It has been already mentioned that the slop-water was disposed of by being emptied into the drain-wells, the cellars, or public streets; and into the streets the soiled refuse-matters were also thrown. To empty the cesspool, the householder had to obtain the services of the night-cart man, an Arab who had engaged in that unromantic but necessary business. All substances transported by the *voirie* and night-cart man were deposited on the beach, to the north-east of the town. This beach, over which the prevailing sea-winds come to the town, at the time of the outbreak,

was in a foul and disgusting condition. Opposite both towns, between their extreme limits, it was covered with faecal matter, the carcasses of animals, and all the indescribable refuse of a town. Flies swarmed in the filth, while dogs and pigs searched in it for their revolting food.

Port Said, like every other town in Egypt, obtains its water from the Nile. For the first four years, those whose work was creating the town, got the water they drank from Damietta. It came in Arab boats across Lake Menzaleh, a distance of thirty miles. In 1863, an iron pipe was laid down to bring water from the Sweet Water Canal, which had then reached Ismailia. Now, there are two such pipes to carry the water, and two reservoirs for storage, one of large size a few miles from Port Said, on the banks of the canal, and the other a small one close to the town. The Port Said water is not filtered; it leaves the Nile by the Boolak Canal, and reaches Ismailia by the Cairo-Ismailia Canal. From the small reservoir, the water is laid on to the better class of houses and the street-fountains. In the houses, the service-pipes deliver the water into cisterns in the cellars or ground-floors, and from these receiving cisterns it is pumped up into cisterns in the upper stories.

Some of the former cisterns are in most dangerous situations. I have seen one, which was made of cement, placed in a cellar against a leaking cesspool wall, and also left uncovered. The people whose houses are not supplied with water, obtain it from the street fountains.

I may mention here, that from the Egyptian cholera epidemic there has been no evidence of the water-carriage of a cholera poison. On the other hand, the experience was that the water-supply had little to do with the spread of the disease; for the epidemic travelled up the river against the stream; and when Boolak, the most filthy Arab quarter in Cairo, was attacked, although the Port Said water, which was usual unfiltered, flowed through it in a sluggish canal, it produced no reappearance of the disease.

According to official reports, the cholera made its first victims in Port Said on June 27th; and during the whole length of its stay, which terminated on July 4th, it only attacked eleven persons, and was fatal to only eight. It is unfortunately true, however, that for scientific purposes no reliance can be placed on the official returns of the Egyptian cholera epidemic. With regard to Port Said, I believe, if the whole truth were known, that cases of choleraic disease were occurring almost as early as the appearance of the disease at Damietta on June 22nd. At any rate, I know, on pretty reliable information, that cases which had excited the suspicion of the medical officers occurred on or before the 25th; and it is far from improbable that there had been cases before the suspicions of these gentlemen were awakened.

All the attacks of cholera took place in the Arab town. The infected houses were widely distributed, and presented no unusual similarity. I know little of the individual histories of the persons attacked, but from what I could gather, it would appear that they nearly all belonged to three families, and that none of them admitted having been to Damietta except one man.

After July 4th there were three cases of choleraic disease, two of which occurred in the Greek quarter, proved fatal, and were returned as ordinary diseases.

When the rumour reached on board the *Iris*, the ship on which I was serving, that cholera existed on shore, I was sent to obtain certain information on the subject. I called on the sanitary medical officer, Dr. Flood, whose name subsequently became well known in connection with the Mohamed Halifa theory of the importation of the disease. He informed me that there had been cases of cholera, and also of choleric, and that the preventive measures which had been taken were the burying of the dead in deep graves with chloride of lime, the prohibiting the sale of fruit in the town, and the stopping of watering the streets. Subsequently, the governor of the town was induced to organise a sanitary commission, and to appoint me one of its members.

The Commission began to work on June 30th, and continued in existence to the end of September. In referring to the work done by it, I shall only mention the measures carried into effect, omitting those which stopped at the stage of propositions. A sanitary cordon was placed round the town on July 1st, and maintained until September 4th. Wooden huts were erected for the treatment of cholera patients. Infected houses were disinfected and closed, and the occupants placed in quarantine in the huts mentioned; as no cases of disease occurred after the erection of these, the entrance of fruit was allowed into the town after an inspection. Some of the cesspools in the Arab houses were cleaned out, and filled up with sand. The unoccupied ground round the town was cleared of faecal matter; latrine-trenches were dug in it; the public latrines were repaired, removed further from the

houses, and increased in number; and the sewage and refuse, instead of being thrown on the beach, were buried there. The narrow passages between the Arab houses were cleared of rubbish. The butchers were compelled to remove their cattle out of old dirty pens close to the windward side of the town into stables in the public abattoir, and these pens were demolished. When the butchers, in consequence of being thus interfered with, banded together and made the price of meat excessive, the Commission imported cattle from Cyprus and opened a meat-stall. The commercial basin in the harbour was dredged, and the Arab boats which lay at anchor crowded together in this sheltered place were sent to a more exposed position. Many of the cellars in the European town were cleaned out, and their floors covered with fresh sand. The offal from the abattoir was buried, instead of being thrown on the beach. Water-closet accommodation was procured for the Greek colony. Some of the masses of habitations in the Arab town were thinned by the removal of a number of houses. A list of precautions against cholera were drawn up, printed in French, Italian, and Arabic, and posted in the town.

In bringing the measures enumerated into execution, the Sanitary Commission of Port Said did good work. It then became possible to walk in and about the town with clean feet; filth and refuse disappeared beneath the ground; and the atmosphere lost its accustoming smell of sun-dried fecal matter. Even a lessening in the swarms of flies, a perpetual plague of Egypt, was noticed by many.

In the staying of the disease, however, I believe that our work had but little part, because it improved in only a small number of cases the state of matters within the houses. The internal condition of the dwellings, for many evident reasons, has the most potent influence on the health of the community, while it is the thing most difficult to bring under the action of compulsory sanitation.

That which I believe the inhabitants of Port Said have to thank for saving them from an epidemic of cholera, in spite of their heinous violations of the laws of health, is the summer sea-wind. This wind, to which I have attributed such beneficent power, becomes established annually about the latter end of June, and in the year in question on the 24th of that month. In its daily characters, it is very constant. It rises in the forenoon about ten o'clock, increases in strength up till three or four in the afternoon, declines and dies away about midnight. Port Said, without one sheltering or beautifying tree, stands close to the shore, fully exposed to its influence. The white walls and brown roofs of the European town, and the grey wooden roofs of the Arab quarter, make up bare and unpicturesque objects enough, but the more easily does the health-giving sea-breeze penetrate them. When there was a considerable panic on account of the cholera, I often felt, when walking on the beach in the splendid wind, that in such an atmosphere no epidemic could exist. I was assured myself, and felt justified in assuring others, that the cholera would not long continue at Port Said.

I come finally to make a short reference to the origin of the cholera-epidemic in Egypt, because, in my opinion, with the comparative immunity enjoyed by Port Said, it is intimately related in causation. For, at the time and just before the former took place, there was a marked absence of the agent to which I have attributed the latter.

I accept the grand conclusion of Sir W. Guyer Hunter, as stated in his great report on the cholera-epidemic in Egypt, namely, that the disease rose spontaneously in the country; but, with all deference, I venture to differ from him with regard to the order in which he assigns importance to the causes. He says, referring to the epidemics of 1865 and 1883, "the outbreaks at each period corresponded to a Nile about its minimum level, and their cessation to a Nile advancing towards its maximum, or to what may be called the dry and wet seasons respectively;" and again, "that the arrest of the epidemics is due to the inundations there is not, I think, much room to doubt."

Now, I believe there are certain facts which will not harmonise with the giving to the Nile this high share in determining when epidemics shall begin and when they shall cease. In olden times, when the plague had its home in Egypt, September and October, the months when the river is at its highest, were the favourite time for it to commence its ravages; and, according to my experience, that is still an unhealthy time of the year. During those months in 1882, our troops suffered much from enteric fever, and in the same months in 1883 there were several epidemics of dengue fever, and a recrudescence of cholera at Alexandria. Again, the cholera in 1865 and 1883 advanced up the Nile, both in the Delta and in Upper Egypt, against the inundation, and it began to diminish in the towns first attacked before any appreciable rising of the river had reached them. Further, there are places, like Port Said, which may be said to be almost unaffected by the height of the Nile.

Sir Guyer Hunter meets this argument, in reference to Upper Egypt,

by saying that, "in order to prevent injury to the maize crops in Upper Egypt from the rising Nile, the water is carefully excluded from the canals and reservoirs, and so the land is not subjected to the inundation until a period subsequent to that of the Delta." I should expect, however, that the maize crop was reaped at Esch before September 5th, when the cholera reached it.

About the time, however, when the Nile is at its depth, and when it begins to rise, important changes take place in the climate of Egypt; and the influence which the meteorological states exercise on the health of the country has been popularly attributed to the river, through the natural temptation of ascribing in Egypt all potent influences to the Nile.

After the early spring, whenever at intervals the hot desert-winds no longer blow, there is a period of variable winds, frequent calms, and great humidity of the atmosphere. This period occupies most of the months of May and June.

Its termination is marked by the establishment of the summer sea-breeze to which I have attributed the limitation of the disease at Port Said. During the day and part of the night, the wind blows with considerable force, banishing all stagnation from the atmosphere, and sweeping away impurities from all but the most confined spaces. I have not time to enumerate all the opposite influences of the weather at these two periods. One has but to experience the depression produced by the one, when the skin is covered with a clammy moisture which chills on the least lowering of temperature, and the exhilaration produced by the other, when, as it were, the body rejoices at every pore, to be prepared for the reception of the doctrine, that the epidemics which grow in Egypt during the former, and decline during the latter, are under the influence of meteorological conditions.

Now, particularly with regard to the weather and the cholera in the late epidemic, I shall briefly quote a few extracts from reports which have been furnished by different observers.

In the first place, information on this subject in reference to the time of the outbreak at Damietta, is given by the following letter, which I sent to the Director-General of the Medical Department of the Navy.

"SIR,—I have the honour to inform you that, in the remarks with which I accompanied the meteorological table for June, I overlooked an important circumstance. I remarked that the first twenty-three days of June, together with the last three days of May, was a period of excessive relative humid and occasional calms, especially at night; but I missed to point out that these meteorological phenomena were most marked in the period of nine days from the 12th to the 20th. During these days the mean relative humidity at 9.30 A.M. was 97°, and at 11 P.M., 98°. The mean temperature in the shade was 76°; the maximum, 80° on the 16th, 17th and 18th; and the minimum, 72° on the 12th and 15th.

"The four-hourly readings of the dry and wet bulb thermometers, entered in the ship's logs, also give a mean relative humidity for the day—8 A.M. to 4 P.M.—of 97°; and for the night—8 P.M. to 4 A.M.—of 98°; and part of each night, from the 12th to the 17th, is logged 'calm.'

"In this period of nine days, the observations at Port Said, off Damietta (on the 17th), and at Alexandria, and, in their different localities, they had the same characters. There is no doubt, therefore, that the atmosphere of Damietta, from the 12th to the 20th of June, was either completely saturated with moisture or on the verge of being so.

"On June 11th, people from all parts of Egypt began to flock to Damietta to attend the fair of Sheik-Abou-el-Maate on the 19th, 20th, and 21st. They dispersed, and on the 22nd the cholera declared itself in the town by the deaths of fourteen people. It is a strange coincidence that, when more than 15,000 people had crowded into a place, the revelation of whose unsanitary condition has shocked the world, and had begun their eight-day course of veritable orgies, then the atmosphere should become filled with moisture and stagnate."

[Extracts were read from Surgeon-General Hunter's Report, showing that when the disease attacked the British troops at Cairo on July 23rd, and at Ramleh on August 23rd, and before it broke out at the village of Chalby, near Alexandria, the atmosphere was stagnant and oppressive; also that the month of June, 1883, had the lowest mean wind-force of any June for thirteen years; and that the period from the 12th to the 20th of that month, for the combination of excessive humidity and low wind-force, was unique in the meteorological history, not only of the month of June, but of the entire years since 1876.]

A paper dealing with cholera would be incomplete without a reference to the germ-theory of the disease. That there is a particular

microbe constantly associated with Asiatic cholera, from the researches and discoveries of Dr. Koch, must now be admitted. To my mind, however, it is not proved that the bacillus which has been found causes the disease, nor has it been shown, as far as I know, that the same bacillus is not associated with so-called sporadic cholera. I look upon the subject of the germs of disease as a most interesting and important one, and have no doubt that discoveries in that field will give valuable aid in diagnosis; but that they will give important help in the prevention of disease has yet to be proved.

To my mind, it is of far greater importance, in the cause of prevention, to find out what conditions of life, in the individual, the home, or the atmosphere, bring about the states of body in which disease-germs flourish, than to discover the germs themselves and follow their natural history. Given a community like what was seen at Damietta, which, though living in violation of all the laws of health, has become ripe for disease, to establish an epidemic among them it is not necessary to search the world far or long for a germ.

At the present time, Dr. Koch has frightened all Europe by declaring that from Toulon and Marseilles the cholera will go everywhere. I think that his warrant for so terrible a proclamation is not sufficient. If I could foresee what will be the character of the weather over Europe, I believe I could foretell whether or not the cholera will spread. If there should be a prevalence of the hot, stifling, stagnant condition of the air, such as is said to have visited the affected towns, then I should say, prepare for the disease; but if purifying winds reign in the atmosphere, I should say, fear not the cholera of Toulon and Marseilles.

With regard to the British Isles, I think we have strong grounds for hoping that, owing to the late change in the weather, with its rain and brisk breezes, we shall not see the cholera within our shores this year.

TREATMENT OF IN-GROWING TOE-NAIL.

Read in the Section of Surgery.

By J. WALTON BROWNE, B.A., M.D.,

Surgeon to the Belfast Royal Hospital.

I THINK we must all admit that the treatment of the severe forms of ingrowing toe-nail—onychia lateralis—by the methods of evulsion, partial removal, scalping, destruction of the granulations, surrounding the side of the toe by caustics, mercurial fumigations, etc., is unsatisfactory.

The common mistake made is to blame the nail. The nail is not at fault, but the skin surrounding this becomes thickened, hypertrophied and ulcerated, and grows until the nail is overlapped. Granulations then spring up, from which an irritating discharge proceeds. I need not recount the various operations which have been described by Sir A. Cooper, Mr. Hutchinson, and other surgeons, for the relief of this affection.

The operation which I advocate is that introduced by Mr. Stilwell of Epsom, and mentioned in the BRITISH MEDICAL JOURNAL of 1872, and consists in removing with a scalpel all the granulations and hypertrophied skin, together with a large portion of the surrounding sound structures, skin-deep from the side of the toe, sometimes making an open wound nearly one inch long by three quarters of an inch wide. I generally apply to the wound pads of lint saturated with compound tincture of benzoin.

By this operation all the diseased parts are removed at once, and a clean healthy wound left to heal by granulations. As cicatrisation proceeds, contraction takes place, and leaves the nail perfectly free, which has no longer any material into which it can be pressed.

I have practised this operation many, many times with most gratifying results, no recurrence having taken place in any of my cases, which is common enough after the usual methods adopted.

SURGICAL MEMORANDA.

SUCKING TRACHEOTOMY-WOUNDS IN CASES OF DIPHTHERIA.

THE painful death of Dr. Rabbeth induces me to offer a few remarks on the subject of sucking out diphtheritic membrane from a tracheotomy-wound, and to suggest what I believe will prove an efficient protection against its dangers.

Suction is, no doubt, a most efficient means of withdrawing any kind of obstructing material from the trachea; but it is doubtful whether this can be accomplished, to any useful extent, through the

tracheotomy-tube itself. The membrane in the trachea is often very loosely attached, and only requires detaching and breaking up by means of a feather to be expelled by coughing. Occasionally, however, it is more adherent to the tracheal wall, but, in such cases, suction alone is not likely to be of any service. In my work on *Tracheotomy in Laryngeal Diphtheria*, published a few years since, I ventured to recommend suction in some cases, "should neither steam, nor the solvents, nor the use of feathers, suffice" to get away the obstructing material. But, for this purpose, I suggested an elastic catheter, and not the direct application of the mouth to the wound or to the tube. Feeling, however, that such a practice might be dangerous (although I had myself done it many times without sustaining any harm) to certain individuals, and probably to everyone in malignant cases or during epidemics, I designed the "trachea aspirator,"

The Trachea Aspirator.

here figured, which I have since continued to use with success. Its mode of use will be evident. The longer tube, after immersion in hot water until it is quite supple, is passed into the trachea; the shorter one serves as a mouthpiece; the glass bulb is loosely filled with iodine, or carbolic, or even plain, cotton-wool, which acts as an effectual filter, and frees the operator from all risk of infection. Every surgeon, I imagine, could extemporise for himself, out of glass and India-rubber tubing, an instrument almost equal to this one, which was made for me by Messrs. Krohne and Sesemann. It possesses many advantages over any form of aspirator with which I am acquainted, for the surgeon can more easily regulate the force he uses, which, if rightly applied, need never be very great, and can feel what he is doing, and whether any shreds of membrane or other material have been caught in the eye of the tube.

But, previous to the use of this plan of treatment, I always recommend that solvents (weak solutions of the alkalies) be sprayed into the throat, and that a feather be then passed in gently and twirled about so as to detach, break up, and entangle the membrane; a proceeding which generally gives rise to a reflex cough, and by which much of the mucus and false membrane are effectually expelled. The trachea can be thoroughly cleansed in nearly all cases by such means. It is when membrane has spread into the bronchi, or when partially detached portions have been drawn down and are blocking one or other of the main bronchi, that suction is indicated, and this, I hold, can but be very imperfectly effected unless some suitable instrument be passed down directly to the seat of the obstruction; in addition, the tracheal wound should be closed over the tube by the thumb and finger, in order to promote the necessary vacuum action.

If an ordinary catheter be used, the danger of self-infection may be immensely lessened by covering its extremity with a few layers of gauze before applying the mouth; even a pocket-handkerchief, folded two or three times, and tied over it, would greatly lessen risk; while the instrument figured above (and which should form part of every tracheotomy armamentarium) will, I believe, entirely do away with it.

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Old Cavendish Street, W., October 26th, 1884.

UNUNITED FRACTURE OF SPINE OF SCAPULA, TREATED BY WIRING TOGETHER THE REFRESHED ENDS.

THE case is interesting—1, on account of its rarity, fracture of the spine of the scapula being an extremely uncommon accident; 2, because of the treatment adopted, which has fortunately converted a powerless arm into a perfectly useful limb.

J. D., aged 31, whilst at his work as a miner in January 1883, was injured by a fall of coal, which partly buried him in the pit. Besides other bruises, he sustained a fracture of the spine of the left scapula, for which he was treated by his medical man for six weeks, when he attended as an out-patient at the infirmary, where various forms of treatment were adopted, up to April 1884, when he was made an in-patient, his condition being as follows. The usefulness of the left arm was very much impaired, as the patient could not raise the limb to a right angle, and had no power to hold it up; consequently, he was