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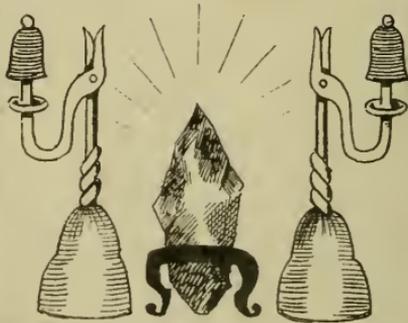


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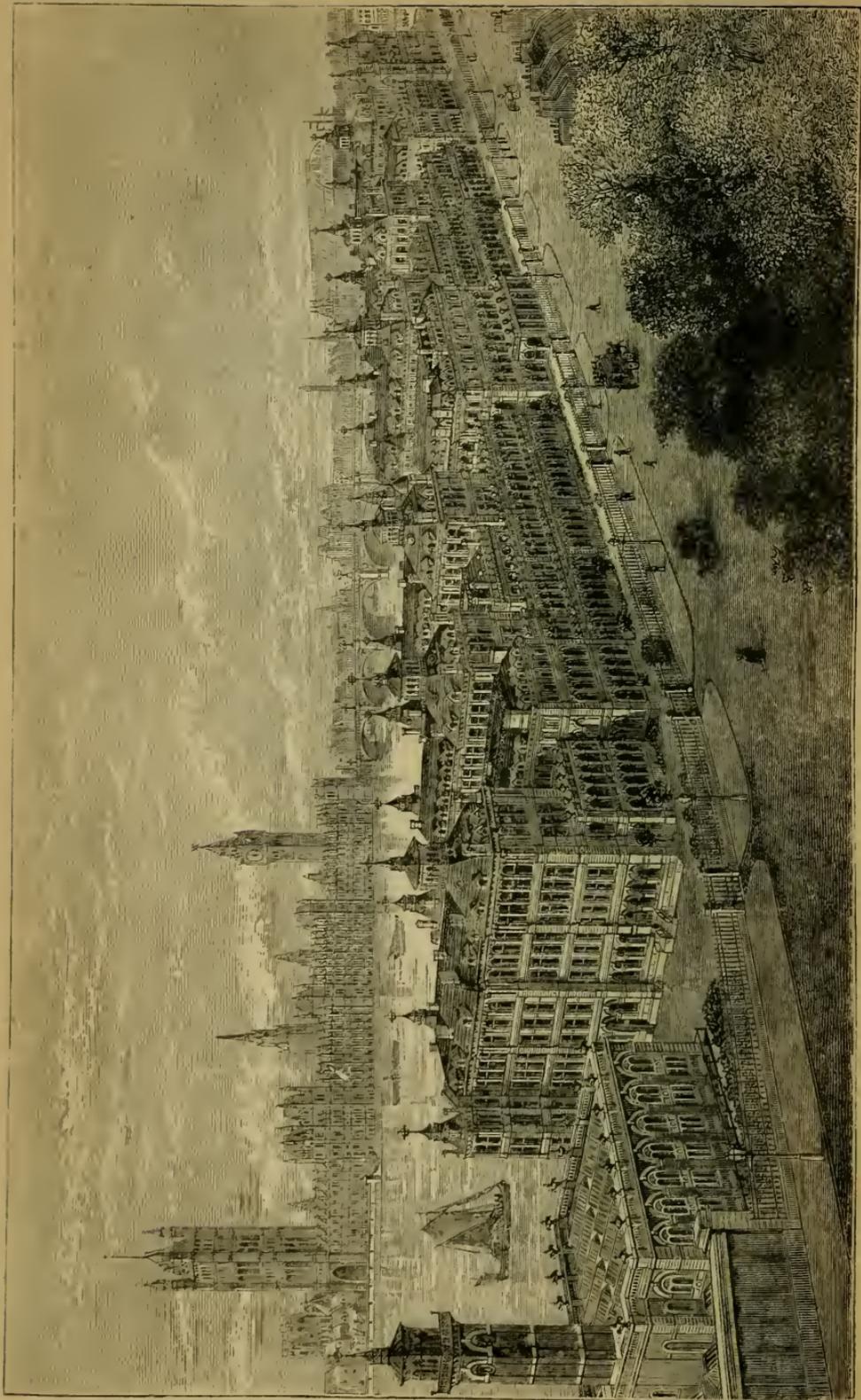
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R. Percy Smith
M.D.

—Get thee (not) glafs eyes;
And, like a scurvy politician,
Seem to see ye things thou
Dost not—



ANNO. M.DCCC. L. XXX. IX.



VIEW OF ST. THOMAS'S HOSPITAL FROM THE SOUTH-EAST.

Mercy Smith m.d.
SAINT

THOMAS'S HOSPITAL REPORTS.

New Series.

EDITED BY
DR. GULLIVER AND MR. CLUTTON.



VOL. XVII.

LONDON:
J. & A. CHURCHILL, NEW BURLINGTON STREET.

MDCCCLXXXIX.

PRINTED BY ADLARD AND SON, BARTHOLOMEW CLOSE.

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SOME RECORDS OF SURGICAL EXPERIENCE,

BEING A CONTRIBUTION TO THE

COLLECTIVE INVESTIGATION OF DISEASE.

(Continued from 'St. Thomas's Hospital Reports,' N.S., Vol. XVI, p. 29.)

BY F. LE GROS CLARK, F.R.S.,
CONSULTING SURGEON TO ST. THOMAS'S HOSPITAL.

Separation of bony epiphyses.—Fracture of zygoma.—Fractures of metacarpus and metatarsus.—Ganglia and bursæ.—Necrosis of bone.—On some causes of error in surgical diagnosis.—Gall-stones.—Fatty tumours.—Enchondroma of pelvis.—Galactocele.

The separation of bony Epiphyses is more common in the upper extremity than in the lower. These injuries are not always readily distinguishable from fractures, and the diagnosis between the two is not very important, inasmuch as the treatment is the same in both. But they also resemble dislocation, and the error in diagnosis in this case is serious. The following cases, selected from among my notes exemplify this form of injury.

A gymnast, æt. 18, was performing on the trapeze, and whilst hanging by his feet and trying to draw up his body between his legs, he felt something give way on the left side of his neck. This injury was at first diagnosed as a disloca-

tion of the sternal end of the clavicle, and unavailing attempts were made to reduce the displacement. When I saw the patient the swelling had abated, and I was satisfied that the sternal epiphysis was separated from the shaft of the bone. The inner end of the shaft rested upon the sternal epiphysis of the bone, the latter occupying its normal position in relation to the sternum. The case was treated as one of ordinary fracture of the clavicle. An interesting feature in this case is the mode in which the accident occurred. There was no evidence of violence having been directly applied to the injured part: the accident was produced by muscular action during the violent effort made by the patient in performing his gymnastic feat.

A lad, *æt.* 16, was admitted into the hospital in consequence of a fall down a flight of steps, whereby his head, shoulder and side were contused. The shoulder was swollen, and the deformity was thereby masked. Crepitus of a muffled character was elicited most readily by moving the arm backwards and forwards, especially when the hand was pressed up into the axilla: the pain was referred to the front of the joint. When the swelling had subsided a large pad was placed in the axilla, and the shoulder was covered with a pasteboard cap. The boy soon recovered the use of the arm, and was dismissed at the end of a month.

A lad, *æt.* 15, fell with violence upon his outstretched hand. My curiosity was somewhat excited by being informed that the injury incurred was a veritable dislocation of the wrist. The supposed dislocation had been reduced, but immediately the support was removed from the joint the hand fell, and the radius projected backwards on the carpus. A brief examination sufficed to satisfy me that the case was one of separation of the epiphysis of the radius, which was thus carried forwards in company with the hand, the base of the bone being left, deprived of its articular extremity, projecting on the back of the carpus. The source of the error in diagnosis was the similarity in the form of the base of the radius, minus the epiphysis, to that of the perfect bone. The diagnostic difference is in the interval between the base of the middle metacarpal bone and the projecting extremity of the radius, which is of course greater when the epiphysis accom-

panies the carpus ; but more especially in the noticeable fact that the styloid process is identified with the carpus in its movements, and distinctly isolated from the radius. Moreover, if this joint can be, or ever is, dislocated, it would surely not be so readily reducible as in the form of injury I am speaking of. I had an opportunity of dissecting a precisely parallel case to this, and I believe the preparation is in our museum. The treatment, in the present case, consisted in confining the hand and wrist in gutta-percha splints, moulded to the entire palm and the lower part of the forearm, both before and behind. Passive motion was commenced at the end of three weeks, and the boy recovered a useful limb, there being free motion in every direction, and scarcely perceptible deformity.

Fracture of the Zygoma is a rare accident : the following is an instance. A young man applied to me under the following circumstances. He was totally unable to separate his jaws or to move the lower maxilla in any way. He said that, two or three weeks previously, he had been struck on the cheek with a policeman's truncheon, and pointed to the left zygomatic arch as the spot. Here the bone was depressed, and the tissues around were a good deal thickened. It was evident that the broken arch was driven in, and that callus was already thrown out in considerable abundance ; for two or three weeks had elapsed since the injury was received, and the trismus had become gradually more confirmed day by day. Of course there was nothing to be done for him, as I declined to use force to separate the jaws, anticipating that nature would accomplish this in due time : and such proved to be the case, for the patient entirely recovered, and there was very little deformity left at the seat of injury.

Fracture of the Metacarpal and Metatarsal bones is caused usually by force applied, as in the case of fractured zygoma just related. A sharp blow or the fall of a weight on the hand or foot is the usual history of these accidents. I have several such cases—though they are not very common—in my note-books. Their diagnosis is so easy, and their treatment so simple, that the narration of these cases is superfluous. It is possible, however, that these injuries may be

overlooked when there is, as is usual, much swelling: it is, therefore, judicious, where the nature of the accident points to this result, *i. e.* fracture, to defer a positive opinion till a more thorough examination can be made. The neighbouring bones form natural splints, therefore rest in a suitable position is all the treatment that is needed.

True *Ganglia* are always offshoots from, or associated with, tendons and their thecæ: they are essentially abnormal productions. *Bursæ*, with which they are sometimes confounded, are, very generally, of normal existence, but subject to morbid development from mechanical irritation. But *bursæ* may be developed where they are not naturally present, apparently by expansion of the meshes of the areolar tissue, when subjected to pressure or friction. Both ganglia and *bursæ* may become troublesome, and require treatment to abate the inconvenience of their presence or size. If such treatment be by surgical operation, necessary precautions must be taken to avoid consequences far more serious than the disease. I have very little confidence in absorbent applications: I do not know that I ever saw iodine alone of any service. Its application after a blister is useful; but when that treatment is adopted, I believe it is chiefly the blister which does the good. Pressure, where it can be properly applied, is efficacious; but especially so in the treatment of ganglia, as on the wrist, after subcutaneous puncture of the cyst. For this purpose I use a long and broad lance-shaped needle, fixed in a handle: this I pass through the skin at $\frac{1}{2}$ or $\frac{3}{4}$ inch from the ganglion, which I open subcutaneously, and having pressed out its contents, with the ball of the thumb, into the surrounding areolar tissue, I place on the spot a piece of sheet lead or a small coin, wrapped in linen, keeping it bound on for a few days.

It is, I think, rarely admissible to meddle with *bursæ* by operation, on account of their susceptibility to inflammation. An open blister, or a repetition of blisters is the best treatment as well as the safest, where any is required.

There is one form of this complaint, which is a serious mechanical inconvenience as well as very intractable: it is that of a synovial swelling, extending above and below the

annular ligament of the wrist, and into the palm of the hand. It is difficult to classify this swelling with either of the forms spoken of. It is certainly a development from the synovial surrounding of the flexor tendons; but in its external characters and pathology it partakes much of the character of bursæ. I would rather incise a swelling of this kind than puncture it: but I think either step would be fraught with considerable risk. Repeated blistering, followed by uniform pressure from the fingers to the elbow, is the best treatment. The utmost that can be expected, in my experience, in these cases, is to mitigate the evil without curing it. I remember an instance in my early practice, where I rather rashly punctured a large bursa beneath the semi-membranosus tendon behind the knee, and nearly lost my patient from the phlegmonous inflammation of the leg which followed.

Necrosis of bone is a well-worn subject. The experience of every hospital surgeon supplies him with a multitude of cases of every description. The recognised treatment of the disease admits of but little variation, except in the details applicable to individual cases. The time to be selected for operating is an important detail; and I think the selection is more often made prematurely than delayed too long. Where the suppurative drain is telling on the patient's health or producing hectic, an early operation, however the difficulty may be thereby enhanced, is the preferable alternative. But, where the patient's health is well sustained, the longer nature is permitted to act upon the sequestrum the easier does its removal become.

Necrosis of bone is usually the consequence of an acute inflammatory action, either in the bone itself or its periosteum, or, more rarely, in its interior. It is not, except in rare instances, a degenerative action, as caries usually is. A very frequent cause to which necrosis is originally assigned is mechanical injury, aided often by accidental predisposing causes, such as exposure and hardships of various kinds. In such cases the structure of the bone itself is often primarily affected. Where the inflammation is due to the agency of cold and wet clothes, the periosteum is the tissue first affected. In one of a series of Clinical Lectures which I delivered in the

Hospital in 1861, and which was published in the 'Medical Times and Gazette' I narrate several cases illustrative of extensive necrosis, in order to direct attention to points of considerable importance in the early diagnosis of these cases. I will briefly quote one of these to exemplify the practical points in question. The history is that of a boy, *æ*t. 12, who was healthy until, after repeated exposure to wet, he was attacked two months previously with fever, the right knee and shoulder becoming, at the same time, much swollen and tender. His medical attendant appears at first to have regarded this attack as rheumatic fever; but the symptoms being of a low type, he afterwards pronounced the fever to be typhus. Ten days before the boy's admittance into the hospital the shoulder suppurated; and in a week subsequently the bone protruded. When admitted he was emaciated and feeble, pulse weak, and tongue red and glassy. Just beneath the acromion the upper extremity of the shaft of the humerus, separated from the epiphysis, was extruded through an ulcerated opening in the skin, to the extent of about an inch. The granulations of the red and swollen edges adhered to the exposed bone. Under a generous diet the boy's health improved; and after the lapse of two or three weeks, I was enabled, by detaching the protruding bone from its surrounding connections, to loosen and withdraw the large sequestrum. This required considerable force; and the necrosed portion included fully half of the shaft of the bone. Continuity between the sound lower half and the head of the humerus was established. The arm was somewhat shortened, but the head of the bone followed the movements of the new shaft. The boy recovered, with a fairly useful limb.

I have, in my note-books, a similar case in a boy *æ*t. 13, who had been under my notice for a considerable time, and in which I contemplated the necessity of amputating at the shoulder-joint: but I was at length enabled to remove the entire shaft of the humerus. He was discharged from the Hospital with a good arm, using it freely, and with good motion at both shoulder- and elbow-joints. There was not even an open sinus remaining. This case was, I think, reported in the 'Lancet,' about the time it occurred, 1853.

The former of these two cases exemplifies a not infrequent

source of fallacy in the diagnosis of acute osteitis. Simple fever, as well as rheumatic and typhus fever, are associated with the local disease, and are made to appear, as they often are supposed to be, its *cause*, instead of being regarded, as I believe that usually they really are, as constitutional effects or concomitants of the local disorder. This is a point of considerable practical importance, as it may mislead the practitioner into treating the effect, whilst he ignores the active cause.

Osteitis and necrosis of bone may be a sequence of fever in some of its forms ; but I believe this is much more rare than is usually supposed, for the reason assigned. When it so occurs, it does not succeed the early stage of the fever, but is rather a later consequence of blood-poisoning.

Acute inflammation of bone runs its course rapidly, and is, unfortunately, not very amenable to treatment : but the more chronic forms are more misleading in their early stage. The most quickly fatal cases are those in which the patients succumb to what appears to be an acute attack of fever, attended by pain and swelling in some part of a limb or near a joint. The autopsy demonstrates the presence of acute osteitis, followed by suppuration and pyæmia, as the cause of death ; and this, perhaps, within a few days of the first appearance of the symptoms.

The transfer of pus to some other organ is not infrequent as a consequence of acute osteitis. The explanation of this circumstance is not very clear ; but it is probably due, in a measure, to mechanical facilities afforded by the venous circulation in bones : for it is found that not only is the periosteum ripped up, and the cancellous texture loaded with the products of acute inflammation, but pus is also found pervading the Haversian canals of the compact tissue. The veins are probably involved in the inflammatory action : but ulcerated openings in their walls would facilitate absorption, where the density of the surrounding texture does not permit of the ready diffusion of the rapidly secreted pus and other inflammatory products.

In these cases of acute inflammation of bone, terminating speedily in suppuration, we find pus deposited between the periosteum and bone, separating them from each other, and

entailing loss of vitality, perhaps of the surface of the bone only; or, if the inflammation have extended deeper, there may be necrosis of the entire thickness of the shaft, and pus will then be found in the canal of the bone.

It is rarely that the epiphyses are involved in the destructive process, the necrosis being limited to the shaft, as exemplified in the cases narrated, and in another instance under my care, in which the entire shaft of the femur was removed in a necrosed state, and the patient recovered with an useful limb. These cases of death of the whole shaft of a long bone are not common, and the diagnosis of the extent of the mischief is not always easy. The amount of discharge through sinuses is no sure guide; for it is remarkable how much irritation and suppuration may be caused by a small sequestrum. When necrosis affects the cancellous texture of the epiphysial end of a long bone, the mischief not infrequently extends, by contiguity, to the joint, the invasion of which is marked by sudden and acute aggravation of symptoms and serious constitutional disturbance. Having noticed this condition in several instances of excision of the knee-joint, I am disposed to attribute, in such, the articular disorganisation to the extra-articular necrosis as the primary disease; though, doubtless, in some cases the joint affection may be antecedent to the adjacent necrosis.

The proper time to select for surgical interference is a question of the utmost importance. The looseness or otherwise of a sequestrum is a guide, but an uncertain one: for this depends on the accidental circumstances of position, size, accessibility, &c. The abundance of the discharge is also untrustworthy by itself, for the reason just now mentioned. The history of the attack, the length of its duration, and the general condition of the patient must determine the surgeon. It is rarely justifiable to delay where hectic fever is present. A patient in this condition will bear the shock of a protracted operation better than the wearing influence of profuse suppuration. The absorption of the animal element of the bone is accompanied by the disintegration of the inorganic material, and its discharge, in solution or in minute particles, in the pus.

On some causes of Error in Surgical Diagnosis.—Amongst the sources of error in diagnosis may be mentioned certain deformities indicative of conditions which do not really exist, but dependent on other forms of injury or disease, or upon special habits or occupation. The following cases exemplify these misleading peculiarities.

1.¹ A young woman was admitted into the Hospital, suffering from numbness and shooting pain in the shoulder, which had troubled her for twelve months. On viewing the shoulder from the front, its form was immediately suggestive of a dislocation of the head of the humerus into the axilla. The acromion stood out prominently, all rotundity was lost, and the finger could be placed almost in the glenoid cavity, the humerus having dropped considerably, consequently on atrophy of the deltoid and capsular muscles; and all power of movement was lost. On examination an abscess was found, occupying the pectoral region, and extending in front of the shoulder. Fluctuation could not be detected in the axilla. A large quantity of fetid pus was withdrawn through an opening over the pectoral muscle. The patient's condition improved slowly; and with that improvement the deformity of the shoulder diminished. It is scarcely necessary to remark that a similar deceptive appearance results from any injury paralysing the shoulder muscles, or from joint disease entailing dropsical or purulent effusion into the capsule.

2. A blacksmith was admitted, with a fracture of both bones of the leg, which was put up on a long back splint, the fractured ends being in good position. A few days afterwards my attention was attracted by the position of the patella in relation to the foot, which showed great inversion of the lower part of the limb, for the knee-cap looked almost directly inwards. As the sound limb presented no similar deformity, I directed the attention of my dresser to the supposed displacement, and requested him to give it careful attention. As no improvement in this respect was apparent at my next visit, and as the fracture presented no evidence of corresponding displacement, I was induced to make some further inquiries, which led to my ascertaining that the deformity in this, his right limb, was due to the peculiar

¹ Some of these cases were reported in the 'Med. Times and Gazette' in 1863.

position in which he stood when he wielded the sledge hammer which he used at his work.

3. A stout, muscular man was thrown from a cart, and fell on his shoulder. There was much effusion and extravasation of blood. The arm hung, powerless, by his side, and there was hollowing over the head of the bone, giving decided prominence to the acromion. This was a condition suggestive of fracture of the neck of the humerus, especially as there was free passive mobility at the joint, accompanied by total inability to raise the arm from the side. But no fracture could be detected: the depressed head of the bone could be felt rotating beneath the finger when the humerus was moved, and the deformity was obliterated when the bent elbow was simply lifted: moreover there was no crepitus, nor abnormal prominence in the axilla when the arm was raised. We had to deal with a case in which the severity of the local shock had paralysed the muscles and caused effusion into the joint. The use of the limb was gradually restored as the severe bruising subsided; but the patient continued to complain, for some time, of pain along the course of the musculo-spiral nerve.

In this case probably both radial and articular nerves were contused; and I may remark that even slighter contusions of the shoulder will produce this painful and intractable paralysis of the muscles around the joint. The treatment which I have found most efficacious in these cases, when they become chronic, is repeated blistering till the pain is relieved, and the subsequent employment of electricity.

4. A saddler of middle age was the subject of a dislocation of the shoulder-joint, which I reduced after the lapse of a considerable interval from the receipt of the injury. Though there could be no doubt about the head of the bone being restored to its articular cavity, I was a good deal perplexed by a continuance of very marked deformity in the joint, the shoulder being more flattened and lower than the other. On inquiry I found that the man had been accustomed to carry heavy weights on the opposite shoulder, which was the cause of the contrast and of my misgivings respecting the completeness of the reduction.

5. Deformity from habit, with which the above case may

be classed, is not infrequent. A young man who was under my care for in-growing nail, which had troubled him for some time, and was cured by first removing the exostosis which was the original cause of it, had acquired the habit of relieving the tender foot by walking with a stick and raising the opposite side of his body. The consequence is that, after the lapse of two or three years, he still carries one shoulder considerably higher than the other. A fixed position, in which the spine is bent to one side, is not infrequently productive of spinal deformity, as is well-known : but a careful investigation of the cause of the mischief in young people, and its correction might be studied a little more with advantage. Care should also be taken that, in correcting one deformity we do not entail another ; which occurred to me in an effort to prevent contraction in the healing of a burn involving the axilla. An apparatus which I had made to keep the arm separate from the side was producing lateral curvature of the spine by inducing the patient, a boy, to lean to that side to relieve the tension produced by the instrument. Fortunately I discovered the commencing mischief in time to stay it. The secondary effects of spinal curvature, though very perplexing and misleading to the uninitiated, are generally too well understood by the practitioner to need comment.

Hysteria and intentional dissimulation are responsible for much that is deceptive and misleading in diagnosis. It is difficult to draw a defined line between that which is due to hysteria, and that which is feigned,—apparently for the sake of attracting sympathy,—for the simple reason that it is hysterical young women who are usually most disposed to assume complaints which they have not : but it behoves the practitioner also to beware of the artful tricks of those who, for less venial purposes, practise on their credulity. I have treated of this subject in another paper, and I will now confine myself to a few deceptive conditions which present themselves to surgeons, many of which, including deformities, have come under my notice. Not only is functional derangement simulated, but organic disease is imitated. The breast is liable to an affection recognised as hysterical, in which this organ is the subject of acute pain and, sometimes, accompanied by considerable swelling and hardness. In some instances there

is a defined tumour, which naturally alarms the patient, and might excite the surgeon's apprehension, if he were not acquainted with its true character. Again, the urinary organs are often the seat of derangement. There may be symptoms simulating stone in the bladder, or the quantity of urine secreted may suggest the fear that diabetes is present. But the most common affection of these organs, in women, is that of real or assumed retention of urine. Some remarkably persistent cases of this kind have come under my notice, which, if simulated, manifest a marvellous resistance to the demand for evacuation of an enormously distended bladder. Spinal pain and localised tenderness is another frequent complaint of hysterical subjects, which may mislead the surgeon. But the tenderness in these cases is by no means proportioned to the firmness of the pressure made to elicit it: on the contrary, very light pressure is generally most complained of. The same remark applies to simulated peritonitis: in both cases the tenderness is really confined to the cutaneous surface. Perhaps the most remarkable instances of this class are those in which diseased and stiffened joints are imitated. The knee is often the subject of this affection, and sometimes the hip. I will cite a case to illustrate the deceptive character of this affection, and the best mode of detecting the illusion. A young girl, about eighteen, had been confined to her bed for some time, under medical advice, with supposed hip-disease. When I saw her in consultation, the leg and thigh were drawn up in a rectangular position, suggesting an advanced stage of hip-disease; and I found the joints were rigidly fixed, and that great pain was excited or complained of on any attempt to move them. Before proceeding further I directed that chloroform should be administered; and immediately the patient was under its influence all resistance at once ceased; the limb could be restored without difficulty to its normal form, and all its movements were perfect. Of course directions were given to keep it straight.

Gall-stones.—Two instances of very large gall-stones have come under my notice; one in my own practice, the other in the person of a neighbour and friend, who was under Dr. Alliot's care. I will first narrate very briefly my own

case,¹ which terminated fatally, and then the case under Dr. Alliot's care, which recovered.

I was requested to see, in consultation, a stout lady, æt. 58, who was suffering from obstinate constipation. Eight months previously she had a similar attack, which was relieved: then a hard tumour was perceptible in the right hypochondrium. When I saw her, pain was severe and there was stercoraceous vomiting. She was relieved by free injections of warm water and friction of the abdomen with castor-oil.

Two months later a similar attack, accompanied by severe pain and a hard tumour near the cæcum, terminated fatally in a week. There was no appearance of jaundice on this occasion or at any previous time. The immediate cause of death was an ulcerated opening in the ileum, which had permitted the escape of several small biliary calculi into the peritoneal sac. Two large gall-stones occupied the ileum close to the cæcal valve. The gall-ducts were thickened and dilated, but the gall-bladder was healthy and quite free from adhesion to the intestine. Each of the large concretions measured an inch in length and was four inches in circumference. They consisted of 95 per cent. of cholesterine and 5 per cent. of animal matter.

Mr. B—, a gentleman over eighty years of age, was the subject of the other case. There was no history of any previous attack, or of anything suggestive of local peritonitis. The symptoms were urgent, and continued unabated for a week: there was much pain, constipation, stercoraceous vomiting and collapse. The treatment consisted in giving belladonna and opium internally, and gently kneading the abdomen over the right hypochondrium, by which the obstructing mass, which could be felt, was moved on. The relief of the urgent symptoms was sudden and complete, and a large biliary calculus, an inch and a half in length and three quarters of an inch thick, was soon afterwards voided *per anum*.

In a fatal case under the care of Dr. Bristowe, the remains of the gall-bladder, which was small, communicated directly

¹ This case was published in full, with illustrations, in vol. lv of 'Med.-Chir. Trans.'

with the intestine ; and a gall-stone had lodged in the small intestine, which it obstructed, apparently from spasm of the bowel. A case, very closely resembling mine, is narrated by Dr. Pye-Smith, in the 'Proceedings' of the Pathological Society, 1887, in which the patient recovered, never having suffered from either jaundice or biliary colic.

It is a subject of curious speculation how these large concretions find their way into the intestine. The supposition that a small stone, which has passed the gall-duct, may afterwards grow in size by the deposit of fresh material, seems to be inadmissible ; inasmuch as such accretion must have taken place near the mouth of the duct or not at all : and it is scarcely conceivable that the duodenum would tolerate the presence of such a body without passing it on. Moreover the constituents appear to be unmixed with foreign matter. If, then, the full-grown stone passed from the gall-bladder into the intestine, how was the passage accomplished ? The previous history in these cases throws very little light on the subject. The absence of jaundice seems to forbid the idea that the gall-duct had been obstructed for any time : moreover there was no history of the acute suffering which attends such obstruction. It is, however, not improbable that adhesion between the adjoining surfaces of the gall-bladder and duodenum or possibly the colon, and the subsequent formation of an ulcerated opening, might have been accomplished without any important local symptoms : and such appears to be the most probable solution of the difficulty, as was evidently the case in Dr. Bristowe's patient. But in my case there was no trace of any such communication having been established, the gall-bladder being healthy and free from adhesions. Is it possible for the gall-duct to admit of such distension as to allow a solid body, four inches in circumference, to pass through it ? I think not ; at any rate without the manifestation of unequivocal symptoms at the time. Indeed it is difficult to conceive what force could be exerted to accomplish the transit, or how so delicate a duct could permit such dilatation. Altogether it seems most probable that the transfer of the calculus to the intestine is effected by ulceration of the adjoining surfaces of gall-bladder and intestine ; and that, in some cases the indications of this

process have become obliterated. The subsequent chief obstruction would occur, as in my case, at the ileo-cæcal valve; and so long as the calculus remained impacted against it, the passage would be permanently blocked, and the urgent symptoms would be those of mechanical obstruction, which may admit of temporary relief by the change in position of the stone: the only spontaneous recovery is in the cases where it escapes into the large intestine and is passed *per anum*, or, in rare instances, is discharged through the wall of the abdomen. An interesting exemplification of the latter form of relief has been communicated to me by my friend and former dresser, Mr. William Clapton, in whose practice the case occurred. The gentleman, whose age was 38, had been the subject of attacks of jaundice on various occasions during the preceding two years; and at an early period of this time a swelling appeared over the region of the gall-bladder. This subsequently assumed a more defined character, and proved, when opened, to be an abscess containing several small biliary calculi, which were removed. No bile was found in the abscess. The patient made a slow but good recovery.

A very interesting case of relief from a large gall-stone, by operation, is narrated by our assistant surgeon, Mr. Clutton, in vol. xxi of the 'Transactions of the Clinical Society,' just published. The subject was an elderly woman, who had suffered from jaundice and abdominal tenderness fifteen months before, after which she passed a large biliary calculus *per anum*. Ever since that time, until just before the operation, a tumour had been felt in the position of the gall-bladder. Its disappearance was followed by obstinate intestinal obstruction, for which Mr. Clutton performed laparotomy, incising the abdominal wall below the umbilicus. The stone was readily felt, tightly impacted in the ileum, about eight inches from the ileo-cæcal valve. It was pressed on till it reached the valve, and subsequently, after some resistance, through the valve. The stone was passed, with a motion, on the fifth day after the operation, and the patient, a female aged 70, made a good recovery.

In this case the earlier symptoms seem to point to the probability of the calculus having passed, by contiguous adhesion and ulceration, from the gall-bladder into the intestine.

I will conclude this paper by narrating from my note-books two or three somewhat rare cases, which occurred in the latter years of my connection with the Hospital.

Fatty tumour.—This case, which is remarkable from the position of the tumour, occurred in the person of a young married woman; and her account of herself was, that about five years previously she observed a moderately firm swelling, of small size, above and to the outer side of the right mamma. As this increased in size it rose towards the clavicle; but as it was neither painful nor inconvenient, she was recommended to have nothing done to it. Latterly, however, the swelling had reached the clavicle, and then made its way beneath it, appearing, as large as a small egg, above that bone. She then complained of numbness, loss of power, and some pain in the arm, indicating pressure on the brachial nerves. The tumour was diagnosed as fatty, and such it proved to be. The operation for its removal was commenced by a free incision along the lower border of the outstretched pectoral muscle. Access was thus given to the axilla, and the tumour was found to extend beneath the smaller pectoral muscle, and continuously upwards beneath the clavicle. From the close connection in which it was held to the coracoid process and clavicle by the fascia in that region, considerable difficulty was found in detaching it from the subclavian vessels and nerves, the fascia requiring cautious division with the point of the knife, as the adhesions and relations refused to yield to traction. After this separation the supra-clavicular portion of the tumour was drawn down, and the mass, weighing eleven ounces, was removed entire. One artery required a ligature. The patient made a slow recovery, having diffuse cellulitis in the neighbourhood of the wound and, subsequently, threatening of pyæmia, but she ultimately returned home quite well. The only doubt which was at first felt was, whether the case might be one of chronic abscess; but this suggestion was soon dismissed as untenable. The interference with the functions of the arm, as well as the pain, rendered the operation necessary.

The largest tumour of this kind that I have removed, was from the front and inner part of the thigh. It weighed

several pounds; and in its removal the sheath of the femoral vessels was exposed for a considerable distance.

Enchondroma of pelvis.—A middle-aged woman was the subject of this disease. She was able to give but little account of herself, except that, when she came under my care, she had been afflicted for three years with a tumour above the hip: that its growth was gradual, and increasingly affected her power to walk and her health. The tumour evidently originated from the bone; it was limited to the left side, and could be traced, from the exterior of the pelvis, over the crest of the ilium to its interior, where it evidently encroached on the contained viscera. The patient was anæmic, and lacking appetite and sleep.

I conjectured that the disease was medullary cancer of the bone, but the result showed that I was mistaken. She survived for a considerable time in the hospital, but at last sank rather rapidly. The tumour was entirely confined to the bone, and involved nearly the whole of the os innominatum. The crest of the ilium and some portions of the ischium were the only parts which retained their original structure. The growth was projecting on all sides, and formed a solid tumour of eight and a half inches in diameter, vertically, and nine inches horizontally. On making a section it was found to be enchondroma. The microscopic appearances were those of cartilage. The rectum, vagina and bladder were displaced, and the pelvis of each kidney was dilated, consequently on the compression of the bladder. The uterus was healthy. There were traces of recent pericarditis, which probably hastened death, though there were no symptoms to attract attention during life.

*Adenocèle, with milk-cyst.*¹—A young married woman, æt. 24, was admitted under my care in 1874, with a large tumour of the left breast. She said that she first noticed a swelling at the lower part of the breast eight months previously, when it was about the size of an egg. Since that time it gradually increased in size, but had never caused her any pain, until during the last month she complained of a shooting pain

¹ This case is fully reported, with figures of the tumour and of its structure, in the 'Med.-Chir. Trans.' for 1873.

below the nipple. She had been married two years, and was, up to the time of her admission, suckling an infant, seven months old. The enlarged breast measured twenty-six and a half inches in circumference, the nipple being at the upper part six inches from the chest wall. It was uniform, globular, without fluctuation, and felt doughy, like the normal breast during lactation; the cutaneous veins were enormously distended. The great weight was sustained by the patient's left hand. In removing the tumour the breast proper was found to be unaffected, therefore the greater part of it was left. The only drawback in her recovery was the formation of an abscess which required opening. The hæmorrhage during the operation was troublesome, but not alarming. This large spheroidal tumour, the growth of which commenced, apparently, from the outer side of the breast, weighed eleven pounds, and was found, when cut into from behind, to consist of an enormous milk-cyst, or galactocoele, surrounded by succulent solid walls, on which were milk tubes, and an extra cyst. The walls were of varying thickness, but along the line of section they presented an average density exceeding an inch, and at some parts were two inches thick. The structure of the walls resembled the texture of healthy breast, with interspersed connective tissue; but it was more succulent, and milk exuded from the open orifices of divided milk tubes. A small cyst, containing firm cheese, projected into the larger. The contained milk of the large cyst, about two pints, was like fresh cream, and was composed, according to Dr. Bernays, of the constituents of ordinary cream, with a larger proportion of albumen than usual. There was a continuity between the breast tissue and new growth; but it was very slight, and required care to trace it. The succulent tissue of the walls of the large cyst was shown, under the microscope, to consist of acinuous gland tissue, with an abundance of connective tissue. In the gland tissue there were blood-vessels and ducts.

A twelvemonth after the operation I heard that my patient had been confined; and she wrote to say that her affected breast was painful and full for the first three or four days, but soon ceased to cause her inconvenience.

SIXTY CASES
OF
VESICO-VAGINAL AND RECTO-VAGINAL
FISTULÆ
TREATED IN THE CAIRO CIVIL HOSPITAL.

BY H. MILTON,
MEDICAL OFFICER.

Of these sixty cases fifty were vesico-vaginal and ten recto-vaginal. The vesico-vaginal cases have been compiled in the following Table, which requires a few words of explanation.

In the first column are noted, in the order in which they were performed, the seventy-nine operations to which the fifty cases gave rise. In the second column is given the number of the case on which each operation was performed; thus it will be noticed that operations 3, 12, 21, and 31 were all performed on Case No. 3. In the third column is noticed the length in lines of the largest diameter of the fistula, while in the fourth column is noticed its position, with regard to which the distance between the neck of the uterus and the commencement of the urethra has been divided into three equal segments. The fistulæ occurring in the segment nearest the uterus have been classed as posterior, the others as median and anterior respectively. Those fistulæ in which the whole of the vesico-vaginal septum had been destroyed are returned as "whole base." In the fifth column is noted the operation performed, and in the sixth the use or not of a catheter after

operation. In those returned as "tied in" a Sims' or other catheter was left in the urethra from four to fourteen days, in those returned as "catheterisation" the instrument was passed at intervals of from four to five hours. In the third class of cases marked "none" no catheter was used from beginning to end of the treatment. In the last column is given the result, either failure or cure.

No. of operation.	No. of case.	Size of fistula.	Position of fistula.	Operation.	Catheter.	Result.
1	1	6 lines	Median	Suture with silver wire	Tied in	Failure.
2	2	Pinhole	Anterior	Galvano-cautery	None	Cure.
3	3	9 lines	Median	Suture with silver wire	Tied in	Failure.
4	4	4 "	"	" "	"	Cure.
5	5	Whole base of bladder	—	" "	"	Failure.
6	6	14 lines	Posterior	" "	"	"
7	7	5 "	"	" "	"	"
8	8	11 "	"	Button suture	"	Cure.
9	9	11 "	Median	Suture with silver wire	"	Failure.
10	10	6 "	Anterior	" "	"	"
11	11	Whole base	—	" "	"	"
12	3	5 lines	Median	" "	"	"
13	12	9 "	"	Button suture	Catheterisation	"
14	13	4 "	"	Suture with silver wire	"	Cure.
15	14	Pinhole	Anterior	Galvano-cautery	None	"
16	15	4 lines	"	Suture with silver wire	Catheterisation	"
17	16	Whole base	—	" "	"	Failure.
18	17	" "	—	" "	"	"
19	9	5 lines	Median	" "	"	"
20	18	8 "	Anterior	" "	"	Cure.
21	3	3 "	Median	" "	"	Failure.
22	19	7 "	Anterior	Harelip pins	"	Cure.
23	6	7 "	Posterior	Catgut suture	"	Failure.
24	20	8 "	Median	Glissement with wire suture ¹	"	Cure.
25	21	12 "	Posterior	Button suture	"	Failure.
26	10	6 "	Anterior	Suture with silver wire	"	"
27	22	7 "	Median	" "	"	"
28	23	15 "	"	" "	"	"
29	12	9 "	"	" "	"	"
30	9	6 "	"	Button suture	"	Cure.
31	3	4 "	"	Suture with silver wire	"	"
32	24	6 "	Anterior	" "	"	Failure.
33	6	8 "	Posterior	" "	"	Cure.
34	7	7 "	"	" "	"	"
35	21	3 "	Median	" "	"	"
36	12	4 "	"	" "	"	"
37	25	11 "	Anterior	" "	"	Failure.
38	22	8 "	Median	" "	"	"
39	26	3 "	"	" "	"	"

¹ See details given later on.

No. of operation.	No. of case.	Size of fistula.	Position of fistula.	Operation.	Catheter.	Result.
40	27	13 lines	Median	Suture with silver wire	Catheterisation	Failure.
41	28	8 "	Posterior	" "	" "	" "
42	25	3 "	Anterior	" "	Tied in	" "
43	24	5 "	"	" "	" "	Cure.
44	29	Whole base	—	" "	" "	Failure.
45	28	3 lines	Posterior	" "	" "	Cure.
46	25	Pinhole	Anterior	Galvano-cautery	None	" "
47	1	4 lines	Posterior	Suture with silver wire	Tied in	Failure.
48	30	7 "	Median	" "	" "	" "
49	31	4 "	Posterior	" "	" "	Cure.
50	32	7 "	Anterior	" "	" "	Failure.
51	33	10 "	Posterior	" "	" "	" "
52	34	4 "	Median	" "	" "	" "
53	35	Whole base	—	Transplantation of flap ¹	" "	Cure.
54	36	3 lines	Anterior	Suture with silver wire	None	" "
55	37	8 "	Median	" "	" "	Failure.
56	38	11 "	"	" "	" "	" "
57	39	7 "	Anterior	" "	" "	" "
58	1	5 "	Posterior	" "	" "	Cure.
59	22	9 "	Median	" "	" "	Failure.
60	39	4 "	Anterior	" "	" "	Cure.
61	32	5 "	"	" "	" "	" "
62	40	3 "	"	" "	" "	" "
63	30	5 "	Median	" "	" "	" "
64	33	9 "	Posterior	" "	" "	Failure.
65	41	4 "	Median	" "	" "	" "
66	33	7 "	Posterior	" "	" "	Cure.
67	42	3 "	Anterior	" "	" "	" "
68	43	13 "	Posterior	Suture with wire and catgut	" "	Failure.
69	23	3 "	Anterior	" "	" "	Cure.
70	41	4 "	Median	" "	" "	" "
71	44	3 "	Posterior	" "	" "	" "
72	43	5 "	"	" "	" "	" "
73	45	6 "	Anterior	" "	" "	" "
74	46	Whole base	—	Transplantation of flaps ¹	Tied in	" "
75	22	4 lines	Median	Suture with wire and catgut ¹	None	Failure.
76	47	18 "	Anterior	" "	" "	Cure.
77	48	11 "	Posterior	" "	" "	" "
78	49	5 "	Median	" "	" "	" "
79	50	6 "	"	" "	" "	" "

A perusal of the available literature on the subject of vesico-vaginal fistula showed that it might be of advantage to throw some light on the following points.

First, as to the numerical ratio of cures to cases.

Secondly, the average number of operations necessary to effect a cure.

Thirdly, the results of operations in which the catheter is used, as compared with those treated without.

¹ See details given later on.

Forthly, the comparative results of the different methods of operation.

The number of cases here recorded are too few to allow the deduction of any conclusion, but they are sufficiently numerous to be of value in the compiling of any larger statistics.

With this view the following analyses of the foregoing Table have been drawn up.

ANALYSIS 1.—*The ratio of cures to cases, having regard to the position of the fistula.*

Position.	No. of cases.	No. of cures.	Cures per 100.
Anterior . . .	15	14	93
Median . . .	18	12	66·6
Posterior . . .	10	10	100
Whole base . . .	7	2	28
	<u>50</u>	<u>38</u>	<u>76</u>

ANALYSIS 2.—*The number of operations required to effect a cure.*

Cured by 1 operation . . .	21	42 per cent.
„ 2 „ . . .	10	20 „
„ 3 „ . . .	6	12 „
„ 4 „ . . .	1	2 „
Left uncured ¹ . . .	12	24 „
	<u>50</u>	

ANALYSIS 3.—*Comparative results of operations with and without catheter.*

Mode of treatment.	No. of operations.	No. of cures.	Cures per 100 operations.
Catheter left in . . .	23	7	30
Interrupted catheterisation . . .	28	11	38·5
No catheter used ² . . .	25	17	68

¹ Of these, 10 after one operation, 1 after two, and 1 after four.

² Three cases of small fistulæ treated by galvano-cautery are not included in this total.

ANALYSIS 4.—*The comparative results of the various modes of operation.*

Operation.	No.	Cures.	Cures per 100.
Galvano-cautery	3	3	100
Transplantation of flaps	2	2	100
Wire suture	57	21	37
Button suture	4	2	50
Wire and catgut suture	11	9	81
Catgut suture	1	0	0
Harelip pins	1	1	100
	<hr/> 79	<hr/> 38	<hr/> 48

It will be seen from this last analysis that three modes of operation were attended with a success of 100 per cent.; of these that by galvano-cautery was used only for fistulæ of 1 to 3 lines, and needs no further notice; the transplantation of flaps was performed in two cases, which will be given in detail later on, while harelip pins were used in one case only, and although their use was attended with success the difficulty of insertion and of extraction was so great that they were not used a second time.

The next most successful class of cases was that in which wire and catgut sutures were used in combination, and as this method is not mentioned in text-books, it is described in the following pages, together with the details of the operation as usually performed.

Of the other methods of operation no further notice is required, except that the experience gained through them led to the adoption of the following mode of operation, which, though in the main agreeing with the processes employed by Sims, and by Simon of Heidelberg, differs from them in various details.

Before operation great pains are taken to improve the general health of the patient by good food and tonics, and to bring the mucous membrane of the vagina and bladder, and the integument of the external genital organs, into the best possible condition by frequent emollient irrigations. In most cases the menses are suppressed, otherwise the operation is performed one week after the period.

In cases in which there are evident cicatricial contractions

in the vaginal walls, they are divided some ten days previous to the operation, and the vagina dilated as far as possible to its normal size.

Purge and enema are given before operation, and the patient having been chloroformed, is laid generally on her face, sometimes in the lithotomy position, in either case with the pelvis well raised.

Instruments: vesico-vaginal knife, scalpel, curved scissors, long spring forceps, needle-holder, artery forceps, sponge-holders, vulsellum forceps, Sims's speculum, vaginal depressors, vaginal retractors, wire-twister, needles, wire, catgut.

The knife, Fig. 3, is very long in the handle and shank, the end of the blade is quite round, the cutting edge extending three lines along the back. Total length eleven and a half inches, centre of gravity exactly at junction of handle with shank.

The forceps, Fig. 1, are very long, with bluntly notched extremity, of heavy make, furnished with sliding catch. Total length twelve inches, centre of gravity corresponds to centre of the button of catch when closed.

With the above-described instruments every necessary dissection may be made, and there is practically no need for the multitudinous varieties of knives recommended. They are exceptionally long, but the centre of gravity is so disposed that they can be used with the greatest delicacy.

The needle holder is constructed on the same principles as Sir Spencer Wells's artery forceps, but with long shanks and short jaw, the latter lined with lead.

The needles are of three kinds, curved, angular, and straight. Each is triangular on section, and extra-stoutly made. The angular needles are bent to 135° , with the angle rounded off; they are most handy, and may be made to pierce the tissues in any direction with the greatest ease. The total length of each variety of needle is fifteen lines, and the end is deeply slotted in order to prevent the wire from slipping. There is no doubt that silver wire is the best form of suture for fistulæ, but it has this disadvantage, that the twisted end of the wire has a great tendency to slip round the end of the needle and stand off at an angle, as shown in the diagram (Fig. 7). On pulling the needle through the tissues, this pro-

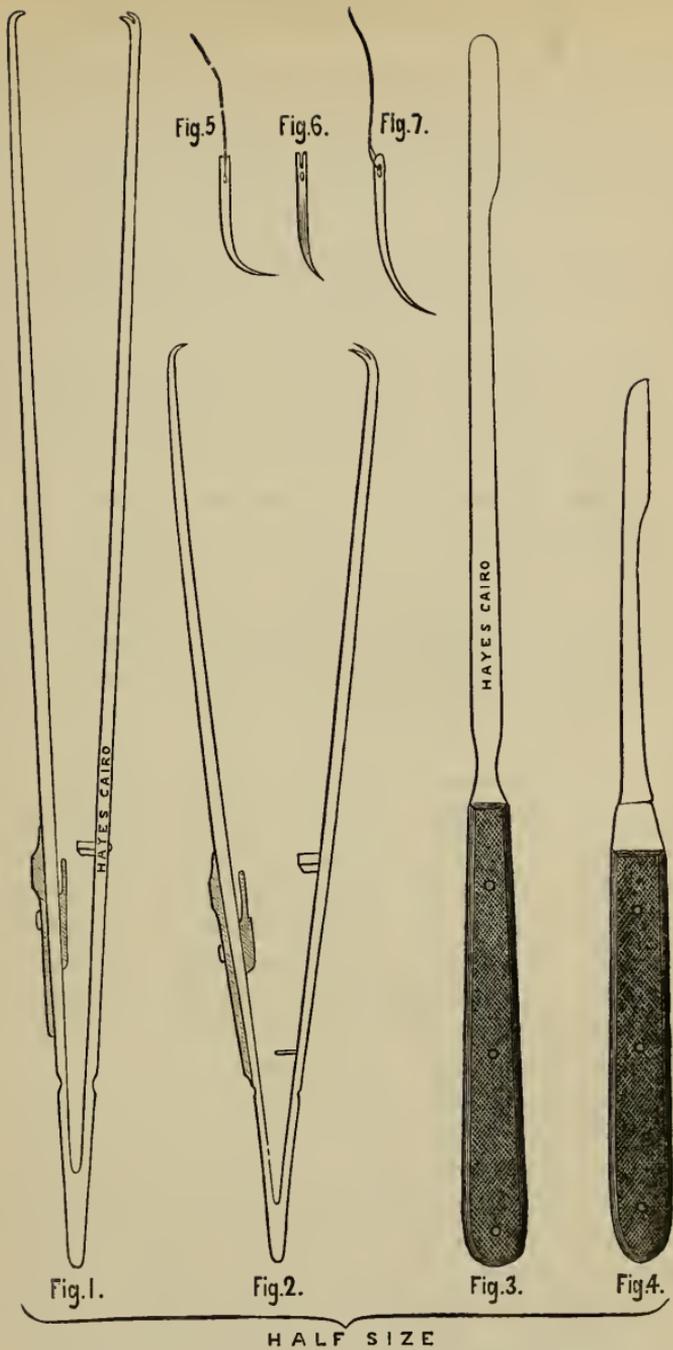


Fig. 1.—Long vesico-vaginal forceps. Fig. 2.—Ordinary ditto. Fig. 3.—Long vesico-vaginal knife. Fig. 4.—Ordinary ditto. Fig. 5.—Needle with lateral slot. Fig. 6.—Needle with antero-posterior slot. Fig. 7.—Ordinary needle, with wire.

jecting angle must necessarily tear them, and where the tissues are but thin, as in the operation in question, this tearing has a most detrimental effect. With the slotted needles here figured this slipping round of the wire is impossible.

The silver wire is thick, but of the softest silver, while the catgut must be Lister's chromic catgut, as old and as wiry as possible.

Operation.—The vagina having been well opened with a largest size Sims's speculum, means are taken to bring the fistula well into view. In those cases in which the fistula is seated near the uterus, and consequently difficult to get at, an endeavour should be made to cause the uterus to prolapse. A strong silk thread should be passed through the whole thickness of the neck of the uterus, or a firm grasp should be taken of it with vulsellum forceps. A firm, steady traction will frequently be sufficient to cause the uterus to prolapse to such an extent as to bring the fistula outside the labia, the subsequent steps of the operation being thus greatly simplified.

In other cases where this is impossible a little manœuvring with the speculum and retractors will suffice to bring the fistula into a favourable position. In two cases where there was great difficulty in getting at the fistula the urethra was dilated up, the finger introduced into the bladder, and by this means the fistula caused to present almost at the vulva.

An incision is then made with the rounded end of the knife, passing completely round the fistula at a distance of four lines from its margin. This incision is just of sufficient depth to cut through the vaginal mucous membrane, which is about one line in thickness. In the great majority of cases this incision takes an ovoid form with its long axis parallel to the long axis of the vagina, such shape and direction being by far the most convenient for the subsequent dissection. Experience has shown that if other details are attended to it is immaterial whether the wound after sewing up lies parallel or transverse to the long axis of the vagina.

The tissue between the incision and the margin of the fistula is then grasped in the forceps and dissected off from the subjacent tissue, the edge of the knife being carried in such a

direction that the cut surface extends from the primary incision to the vesical edge of the fistula, leaving the vesical mucous membrane untouched. In this way a funnel-shaped wounded surface is produced, the blunt apex of the funnel corresponding to the vesical edge of the fistula and its base to the original incision. With a little care and patience the tissue removed may be brought away in a complete ring. This is a great advantage, as it leaves no doubt that the whole margin of the fistula has been removed. If this is not possible the whole edge of the fistula must be carefully gone over, and any, even the tiniest piece of mucous membrane removed. The double-edged rounded knife is, when well assisted by the forceps, capable of dissecting in the most confined space.

A pause of a few minutes and irrigation with cold weak sublimate solution is generally sufficient to check bleeding, a point of much importance. This having ceased, the first wire stitch is introduced, the needle being made to enter the vaginal mucous membrane a line or two beyond the uterine end of the wound, and half an inch distant from the line of its axis. The needle is made to pass along in the tissues, care being taken that its point enters neither the bladder nor the vagina, until it reaches a point on the other side of the axial line corresponding to its point of entry, when it is brought out in the vagina. The wire being pulled through, forms a buried stitch similar to that used in ruptured perineum. The two ends of the wire are grasped in a pair of artery forceps and handed over to an assistant. The second stitch is introduced half an inch from the first, the needle entering the vaginal mucous membrane half an inch from the edge of the wound, and being brought out just at the vesical edge of the fistula, without implicating the mucous membrane of the bladder. Then passing across the fistula it enters the other margin at a point exactly opposite, and is brought out at a point corresponding to that of entry on the other side of the fistula. In the same way further stitches are introduced at intervals of half an inch, until the last, buried like the first, is inserted.

The stitches are then consecutively tightened up by the wire twister, and here a little care is necessary to get the stitches neither too tight nor too loose.

The ends of the wire being cut off, leaving about half an inch

for facility of removal, the catgut stitches are introduced. These stitches are of the greatest importance, they ensure complete closure of the wound, and greatly aid in procuring union by first intention. On referring to the Table of Operations, it will be noticed that twenty-five operations were performed without using the catheter; in fourteen of these cases wire sutures alone were used, with eight successes, or 57 per cent., while in eleven, the combined wire and catgut sutures were used with nine successes, or 82 per cent.

One catgut stitch is introduced between each two wire stitches, each one being inserted one or two lines from the edge, and taking up only the vaginal mucous membrane. Thus, in a wound of one inch and a half, there would be four wire stitches (two of which are buried), and three of catgut. Having tied the catgut stitches tightly, the bladder is forcibly distended with water; if none escape into the vagina the suture is perfect; if there is any flow, either more stitches must be introduced or the old ones readjusted.

A suppository of morphia and belladonna is introduced into the rectum, the patient is put to bed with her legs unfastened, and is allowed to lie as she pleases on the side or back. Four hours after operation the patient is encouraged to pass water in the knee-elbow position; if there is no desire to do so she is left six, eight, or ten hours. In none of the cases treated in this way has the patient failed to pass water within ten hours, but if necessity should arise the urine might be drawn off once or twice. The diet for the first ten days is milk and soup only, with daily morphia suppository. On the twelfth to fourteenth day a soap enema is given, and one or two days later the stitches are removed. In most cases no vaginal douche is used, but if there is the least unpleasant discharge the vagina is washed out with sublimate solution 1 to 5000.

Complications existing before operation.—Contraction of the vagina from cicatrices has already been referred to.

The size of the fistula may be such, and the available tissue so small, as to render an approximation of the edges impossible. In two cases given in detail later on flaps of skin were brought from outside the vagina (Cases 35 and 46). In three cases, one of which is given in detail (Case 24) the gap was closed by a *glissement* of the upper part of the vagina.

In two cases there was complete absence of urethra from obliteration during the cicatricial process (see Case 35). In both cases patients left hospital with power of retaining and passing urine at will.

In three cases there existed simultaneously recto-vaginal fistulae. In one case with vesico-vaginal fistula of six lines diameter and recto-vaginal of three lines, the vesico-vaginal was closed first, and the recto-vaginal afterwards. In the two other cases both the rectal and the vesical fistulae were enormous, and no operation was performed. These cases were seen before the flap operation had been adopted, and should they present themselves again an endeavour might be made to close each fistula with a flap, in fact it is difficult to conceive any fistula which might not be treated in this way.

In one case a calculus was found, and according to the history the calculus preceded the fistula, and possibly aided in its production. It was removed by crushing.

In eight cases the uterus was implicated, but there was no case of pure vesico-uterine fistula. The uterus seems to have less power of union by first intention than the vaginal tissue, otherwise this complication has no importance.

In several cases the urethra was implicated, but there was no case of pure urethro-vaginal fistula. The urethra apparently heals as well as the vagina (see Case 47). It is interesting to note that the cases observed do not bear out the dictum that the nearer to the urethra the easier the operation but the more difficult the cure (see Analysis No. 1).

Urinary deposits on the mucous membrane of the vagina were often so adherent as to require to be scraped off. This is interesting as bearing on the possibility of adherent calculi in the bladder.

Complications during operation.—Bleeding is usually free, but easily stopped by cold irrigation; ice is better avoided. In two or three cases small arteries had to be tied with catgut, and in one case (the first of two operated on the same day) the oozing was so obstinate that the patient was left forty-five minutes (under observation) whilst the other was being operated on.

Tension on the sutures is not uncommon, and may be easily

remedied by incisions in the vaginal mucous membrane parallel to the wound.

In three or four cases the needle has broken during the operation, and portions from four to eight lines in length been left so buried in the tissues as to be unrecoverable. In one case the needle worked out into the vagina, in other cases the bits have never been traced, and have caused, as far as known, no trouble.

Complications after operation.—In one case a bit of sponge was left by mistake in the bladder, causing much pain and cystitis; it was discovered on the eighth day, the operation naturally having failed.

In one case of seven years' standing, atony of the neck of the bladder occurred, and though the fistula was quite healed the patient was but little better off than before the operation. After two months of galvanization of the urethra and bladder the power of retaining urine returned.

In one case, also of "long standing," the bladder, after cure of the fistula, was so small as to hold, when fully dilated, only about three ounces of water. Present condition unknown.

In several cases there has been some lack of power in expelling water, but all have greatly improved with time.

The following four cases, presenting special points of interest are given in detail.

CASE 35. *Large fistula; closure by transplantation of flap.*—Egyptian, æt 16, confined (primipara) eight months before admission, without midwife; delivered fifth day. Urine passed *per vaginam* day after delivery, and whole of urine has passed in the same way ever since.

On examination, body small and thin, pelvis in proportion. Anterior fourchette replaced by cicatricial tissue. No labia minora (removed during clitoridectomy). No trace of urethra, its place being taken by cicatricial tissue; opening into vagina, formed by ring of dense fibrous tissue admitting one finger. In the roof of vagina transversely situated fistula, twelve lines in width, and five from before backwards. Posterior lip of fistula formed by body of uterus, the neck of which had sloughed, anterior lip by the cicatricial ring referred to above.

The original idea was to commence treatment by opening

up the vagina by division of the cicatricial ring and transplantation of flaps of skin from the outside to prevent re-contraction, and afterwards to operate on the fistula. With this view two flaps of skin were raised, one on either side. Each flap was five to six inches in length and one and a half inches broad; the perineal extremity adjoined the posterior fourchette, and from thence the flap ran in a curve down the inner side of the thigh. Each flap was left attached by its two ends.

At the same time the opening into the vagina was enlarged by two lateral incisions down to bone. Fifteen days later the distal end of the right flap was detached, in order to bring it round to fill up the deficiency in the vagina. While doing this the fact was first fully grasped of the impossibility of curing the fistula by the usual process, and the idea presented itself of utilising the flap for its closure. The first necessity was to provide a urethra. A trocar and cannula (size of No. 6 catheter) was forced through the cicatricial tissue underneath the pubes on to the finger introduced through the fistula into what appeared to be the neck of the bladder. The trocar was withdrawn, and the cannula left with its extremity in the bladder. The edges of the fistula were freshened, and the end of the flap tucked into the gap, with the granulating surface towards the bladder cavity, and retained in its position with four wire sutures. These were only introduced with the greatest difficulty. The flap was so long and its attached extremity so curved that there was no tension or kinking. For six days some of the urine passed by the cannula and some by the fistula, the suturing having been almost necessarily defective. Gradually the quantity passed *per vaginam* diminished, until after three weeks all passed by the cannula. On the thirtieth day the stitches were removed. On the forty-fifth the division of the attached end of the flap was commenced, the skin only being cut through, and on each of the following five days a layer of about one line in thickness was divided until the flap was quite detached.

The object of this slow division was to obviate as far as possible the chance of sloughing. The detached end of the flap was, as soon as severed, sewn into wound in right

side of vagina. The fifty-fourth day the cannula was removed, and the new urethra gradually dilated up to No. 10.

The patient finally left hospital with fistula quite closed and passing all urine voluntarily *per urethram*. The vaginal opening admitted three fingers, and as the patient was getting somewhat tired of operations, the left-hand flap had been allowed to attach itself again.

CASE 46. *Large fistula closed by transplantation of flaps.*—Egyptian, æt. 18, confined seven months before admission (primipara), delivered on the fourth day. Urine passed *per vaginam* third day after delivery. On examination, healthy, well nourished, pelvis normal. Huge fistula extending from neck of uterus to symphysis, and laterally from right to left wall of vagina. Antero-posterior diameter twenty-four lines, lateral fifteen, there being in fact no separation between vagina and bladder. It being hopeless to try and bring the edges together, it was decided to try transplantation. The preceding case having left very large cicatrices on the thigh, it was determined to utilise the labia majora, the labia minora having been already removed during clitoridectomy. The two labia majora were detached in their whole length from the subjacent tissues, leaving only the extremities, situated respectively at the mons veneris and the posterior fourchette, attached. Each flap was about six inches by one inch. They were allowed to thicken twenty-one days, and then, the upper extremity of each flap being detached, it was turned into the vagina and attached to the freshened neck of the uterus by two wire stitches, and to the adjacent surface of its fellow by two more sutures, the flaps being twisted in such a way as to bring the granulating surface towards the bladder. A catheter was left in the bladder for twenty-four hours, but as all the urine passed *per vaginam* it was removed. Twenty-five days later the sutures were removed, and on the fortieth day the skin of the right flap was cut through at its perineal attachment, and the flap gradually separated as in the last case, leaving it hanging to the neck of the uterus. The original idea had been to detach the left flap in the same gradual way as the right one, but the right flap after detachment showed such tendency to curl up that it was thought

better to fix it at once in its new position. The left-hand flap was therefore severed from its perineal attachment, and the two flaps, attached now to the uterus only, were sewn together along their adjacent edges, by their external borders to the edges of the fistula, and by their anterior extremities to the neck of the bladder. A catheter was left in the bladder, and a suppository of morphia and belladonna given *per rectum*. On the fourth day the extremity of the left flap (the rapidly divided one) was seen to be sloughing, and a few days later about half an inch of it was removed. On the twentieth day it was found that the flaps had united to each other and to the edges of the fistula except for a space of about three lines, where they touched each other and the uterus, thus leaving a small triangular interval bounded on either side by one of the flaps and behind by the uterus. The slough at the extremity of the left flap had apparently not affected the whole thickness, for the fistula was perfectly closed anteriorly.

This fistulous opening gradually diminished in size until at the end of three months from the second operation the fistula was entirely closed. The new septum between vagina and bladder was still very thick, and retained the characters of skin, but nearly all the hairs had fallen out. In both these cases of transplantation care has been taken to get the flaps so big as to fill up the fistula like a cork fills up the neck of a bottle, for, from the extreme difficulty of introducing the sutures, the sewing is very imperfect.

CASE 20. *Large fistula; glissement of vagina; cure.*—Egyptian, æt. 30; fourth confinement four months previously, three days in labour. Urine passed *per vaginam* fourth day after delivery. On examination, large healthy woman; roomy pelvis. Fistula, antero-posterior diameter eight lines, lateral about the same. Much cicatrization of vagina. As edges of fistula could not be brought together it was decided to try Jobert's principle of *glissement*. Jobert was the first to take advantage of the fact that there exists, immediately above the junction of the uterus with the vagina, a triangular interval filled with loose tissue, bounded behind by the neck of the uterus, below by the vaginal walls, and in front by the

bladder and the reflection of peritoneum from that organ to the uterus. In incising therefore the anterior wall of the vagina at its junction with the neck of the uterus there is no fear of touching the peritoneum; the triangle becomes flattened out, and the upper part of the vagina may be drawn down half an inch or more towards the symphysis pubis.

The patient having been chloroformed, the uterus was seized with strong tenaculum forceps, and after some little difficulty the utero-vaginal fold was made to present outside the vulva. The attachment of the anterior wall of the vagina to the uterus was dissected through to the lateral extent of one inch, and the upper part of the vagina pushed towards the symphysis. On returning the uterus to its position, the size of the fistula was found to be diminished fully one half, and the subsequent operation presented no difficulty.

CASE 47. *Vesico-urethro-vaginal fistula; calculus.*—Egyptian, æt. 29, operated on by native doctor three months previously for calculus. Operation had apparently consisted in passing a knife along the urethra into the bladder, and incising the whole length of the former, and the greater part of the base of the latter.

The urethra was replaced in its whole length by a simple groove, from the posterior extremity of which a fissure ran some four lines into the vesico-vaginal septum. This being the first case in which the whole length of the urethra had required to be sewn up, there was some little doubt as to how it should be best treated. It was evident that when the urethra came to be sewn up, the channel would be very small, the urethra in its present split condition being simply a groove some four lines broad. If then no catheter were used, there seemed to be a certainty of retention, if a catheter was left in there seemed to be no hope of union, and if occasional catheterisation were employed, it seemed impossible that tearing a part of the sutured edges could be avoided. It was decided therefore to make a new fistula behind the existing one, to allow the escape of urine during the treatment of the original fistula. A knife was passed through the vesico-vaginal septum into the bladder, about four lines behind the fistula; into this a self-retaining leaden stud was

fitted, a canal about the diameter of a No. 8 catheter passing down its stem. The fistula was then sewn in the usual way right up to the external meatus of the urethra. Within six hours the patient passed water of her own accord *per urethram*, and after twenty-four hours the stud, proving to be quite useless, was removed, no urine having passed through it, apparently owing to the loose mucous membrane of the bladder riding over its upper surface. For two days a little urine passed *per vaginam*, and on examination on the fifteenth day both fistulæ were found healed. As the patient owed her first fistula to one doctor, it was somewhat a relief to find that she had not a second fistula due to another.

The fourth day after operation the patient had complained of violent colic and pain about left ovary and side of bladder with intense abdominal tenderness and vomiting. This condition, which caused some anxiety for a few hours, passed off with opium and hot fomentations. From the sixth day onward the patient complained of frequent painful urination, and seemed to think that her previous condition of painless incontinence was preferable to her actual very painful power of micturition. On the twentieth day she was sounded with the result of finding a small calculus, the passage of which along the ureter had caused the alarming symptoms on the fourth day, and whose presence in the bladder had caused the painful micturition. The fortieth day after operation it was removed by crushing without damage to her restored urethra.

Most authors agree that recto-vaginal fistulæ, although easier of operation, are more difficult of cure than vesico-vaginal ones. This statement is fully borne out by the cases recorded here, the cause of failure being apparently the difficulty of preventing the rectal gas from passing between the edges of the wound. The transplantation of a flap having proved so useful in the treatment of severe vesico-vaginal cases, it was but a natural sequence to employ the same method for the rectum. Although the cases thus treated are but few, the results obtained justify a further trial of the method.

The recto-vaginal fistulæ operated on were but ten, as compared with fifty vesico-vaginal, the reason of this being perhaps

their less frequent occurrence, but chiefly the fact that in many cases they produced symptoms of not sufficient discomfort to work up the callous Arab to the pitch of consulting a surgeon.

Their causation deserves a word of notice. Of the ten cases only one was due to childbirth, the other nine occurring in prostitutes who had never been confined. The cause was at first unrecognised, being supposed to be perforation of the septum by a venereal sore, until the opportunity of watching a fistula in the process of formation left no doubt as to one, and apparently the most frequent, of the modes of production. The patient in question was suffering from acute vaginitis, during the progress of which the gland of Bartolini on the left side of the fourchette became inflamed and suppurated. The abscess was allowed to take its own course, and finally opened into the vagina, leaving, however, but a very thin septum between it and the rectum, which shortly afterwards gave way, leaving a fistulous opening between the vagina and rectum. It having been suggested that the destruction of tissue was due to a soft chancre, repeated auto-inoculations were practised, but without result.

All the fistulae observed were situated just internal to the posterior fourchette, and varied in size from four to eighteen lines.

Symptoms in most cases were slight; so long as the motions were not loose there was no escape of faecal matter, and even of the thin watery motions of diarrhoea only a small proportion escaped each time that the bowels were opened.

Seventeen operations were performed on ten patients. The first eight patients were operated on by paring the edges of the fistula, and closing it with silver sutures; in some of these a drainage-tube was left in the rectum, in others none. To all morphia and belladonna suppositories were administered, and their diet restricted to liquids. Of these eight operations only one was successful. In the next three, the edges of the fistula after being trimmed were split to a depth of eight lines into two parallel layers,—the superior consisting of the vaginal mucous membrane, the inferior of the rectal. The two vaginal layers were then sewn together by the whole of their opposed cut surfaces, the rectal layers

being treated in the same way. Of these three operations one was successful. The last six operations were performed in a similar way to that described for the treatment of cases of vesico-vaginal fistula in which the whole base of the bladder had been destroyed.

The edges of the fistula having been pared and split to the extent of about half an inch, a flap of skin rather larger than the opening to be filled was twisted round from the most convenient neighbouring parts, and after insertion into the gap was fixed in its new position by silver and catgut sutures. Of six fistulae treated in this way, four were successful.

The comparative results of the three methods are shown by the following Table :

Simple suture	8 operations ...	1 cure, or 12·5 per cent.
Splitting the edges and subsequent suture	3 operations ...	1 cure, or 33·3 per cent.
Transplantation of flap	6 operations ...	4 cures, or 66·6 per cent.

The two cases of transplantation which failed were among the first three operated on, the failure being chiefly due to the smallness of the flap. The last three cases were all successful, a result which could hardly have been obtained by the method of simple suture.

ON HALLUX FLEXUS.

A CONTRIBUTION FROM THE OUT-PATIENT ROOM.

BY G. H. MAKINS.

ATTENTION has been lately called by Mr. Davies-Colley,¹ to a deformity of the metatarso-phalangeal joint of the great toe, designated, I believe by him, as hallux flexus.

The cases detailed in Mr. Colley's paper were long-standing, and no doubt of a severe character, for of five three needed tenotomy and two excisions of the joint to effect a cure. The history of these cases is followed by some remarks as to the possible nature, causation, and course of development of the deformity, but no examples of an earlier and less severe form are furnished.

Such cases, however, are far from uncommon in out-patient hospital practice, and I have been able to select from my own patients seventeen who have come under treatment during the past two years. The affection has been to me one of considerable interest, for before the appearance of Mr. Colley's paper I had experienced great difficulty in assigning the cases to any special category. I commenced by regarding them as instances of chronic rheumatoid arthritis in an incipient stage, in spite of the early age of the patient, the absence of well-marked signs of that disease, and the usual limitation to a single joint, the only exception to the latter

¹ 'Transactions of the Clinical Society of London,' 1887, vol. xx, p. 165.

rule being the occasional symmetry of the affection. The experience of a number of cases has led to a considerable modification of that opinion, for the great majority of those under observation not only offered no convincing evidence of rheumatoid nature, but have also proved very amenable to treatment of the simplest kind. I would mention here, however, that I think this condition may be a precursor of chronic rheumatoid arthritis, which is really common in this joint in older patients, and this point is of importance in relation to what I shall have to say as to the probable nature of the affection and the uncommonness of it in adult patients, since flexion is not present in old rheumatoid joints.

Cases of simple arthritis, or those due to gout or tuberculosis, need no consideration here, for in them flexion is never a prominent sign, and there seems little doubt that in the class of case about to be described no marked pathological change within the joint takes place.

The cases referred to below may be divided into three categories :

1. Simple hallux flexus accompanied by considerable pain.
2. Hallux flexus as indicative of early chronic rheumatoid arthritis.
3. Hallux flexus dependent on muscular contracture.

Of the whole seventeen, thirteen belonged to Class 1, and the characters by which they were distinguished will now be shortly detailed.

The affection is very much more common in the male sex ; thus of thirteen cases two only were females, in each of whom the condition was, although characteristic, not strongly marked. This depends, no doubt, on the causes suggested by Mr. Colley, viz. the harder nature of the work done by the patients, and the harder and stiffer boots worn. In no case did the signs develop after the period of growth of the body was complete and the bones and soft tissues had become thoroughly set. The age of the patients in the thirteen cases varied between the limits of twelve and eighteen years. The affection in the great majority of cases commences, as far as the patient's observation goes, spontaneously ; in only one out of the thirteen cases was the origin referred to a trauma. It may, however, be remarked that these numbers do not tally with those of

Mr. Colley, for to three out of his five cases a traumatic cause is assigned.

The first sign noticed by the patient is pain and stiffness in the joint affected, the pain especially drawing attention to the condition of the foot, and where examined considerable tenderness to pressure usually exists around the articulation, particularly over the prominent head of the metatarsal bone. Any passive movement of the joint greatly aggravates the pain, the toe being held stiff and rigid. This pain and rigidity renders walking troublesome and even impracticable, and progression is effected only by placing the foot flat upon the ground, and rotating the heel outwards on the ball of the toe in place of rising by extension of the joint in the ordinary manner. The similarity of the local tenderness to that noticed in many cases of acute flat-foot will be again referred to. The toe now becomes flexed to a varying degree, in the slightest cases the condition only amounting to an inability to extend the joint beyond a straight line, in the severe cases the flexion may reach a sharp angle. The position of the joint, however, I think varies in the different stages, being well marked in the middle and later ones only. In the latest stages in severe cases, where a species of periarticular ankylosis occurs, the toe may again resume the straight position when the early pain and tenderness, with consequent contraction of the sole muscles, has passed by; in other cases, however, and these are those needing operative interference, the secondary contraction of the ligaments and tendons on the plantar aspect may render the position of flexion more or less permanent. In the earlier stages, and later, when the patient is asked to extend the toe, *i. e.* to execute dorsal flexion, he is unable to do so, and the tendon of the long extensor muscle is seen to be glued down and fixed to the dorsal aspect of the joint; this seems to depend on the periarticular infiltration next to be noticed. At an early period some enlargement of the articulation is noticeable, this enlargement extending beyond the limits of the joint and not consisting of fluid effusion. In none of the cases under notice could fluctuation or evidence of articular effusion be determined. This swelling seems most similar, however, in nature to the infiltration seen around inflamed joints, well

termed by Mr. Hilton, nature's splint, the source of irritation here, however, being external, and not originating in the interior of the articulation. When the cases are of some standing, or where more or less permanent stiffening has developed, there may be creaking on movement, again apparently dependent on the stretching of adhesions around the joint. When the pain and tenderness in the acute stage are severe, the extensor tendons of the toes and the tibials, especially the tibialis anticus, will be found rigid and prominent, no doubt from instinctive effort on the part of the patient to throw the weight of the body on to the head of the fifth metatarsal bone. In relation to this I would mention that in a patient of the better class under my observation the upper leather of the boot of the affected foot was always pressed over to the outer side, while the sole beneath the ball of the great toe was always worn through at an early date from the rotation of the foot at that spot taking the place of the normal movement of flexion of the metatarso-phalangeal joint in the last stage of the act of making a step. Lastly, I would emphasise the fact that in the great majority of cases the affection develops in weakly growing patients or heavy, stout subjects who present feet of an especially elongated shape, with a very shallow plantar arch. The condition may be symmetrical; in two of the thirteen cases this was so, and in the others the right toe was affected seven times.

The following Table exhibits some of the points referred to :

No.	Name.	Sex	Age.	Occupation.	Side.	Cause assigned.	Duration.	Time under treatment.
1	E. E.	F.	14	Service	R.	None	4 months	8 weeks.
2	H. B.	M.	14	School	L.	"	3 weeks	1 week.
3	G. H. S.	M.	14	"	R.	"	1 month	"
4	C. C.	M.	13	"	D.	"	"	6 weeks.
5	C. R.	F.	12	"	L.	"	3 months	5 weeks.
6	A. C.	M.	15	Printer	R.	"	1 year	"
7	C. S.	M.	15	Labourer	L.	Trauma	3 months	7 weeks.
8	G. S.	M.	16	Gardener	L.	None	1 year	2 weeks.
9	W. G.	M.	15	Lift boy	R.	"	"	3 weeks.
10	H. B.	M.	17	Printer	D.	"	3 months	14 weeks.
11	T. H.	M.	18	Carman	R.	"	—	2 weeks.
12	C. M.	M.	12	School	R.	"	3 months	4 weeks.
13	W. H.	M.	15	Labourer	R.	"	2 weeks	—

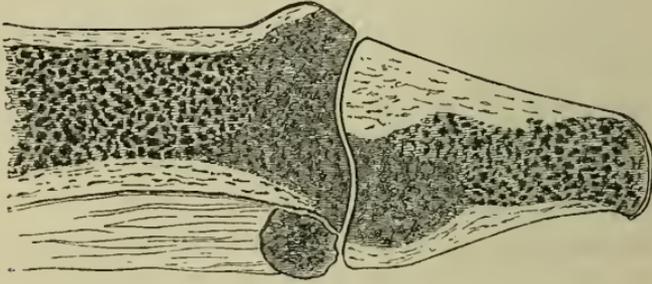
I here append also a small Table of three cases, in which the above condition seemed to have assumed a chronic rheumatoid character; in each the joint ends were enlarged, there was grating on movement, great stiffness and pain and discomfort in walking. It will be noted that in only one instance did the age correspond with that observed in the cases in Class 1.

No.	Name.	Sex.	Age.	Occupation.	Side.	Cause assigned.	Duration.	Time under treatment.
1	G. A. S.	F.	33	Married	R.	None	? years	—
2	G. U.	M.	18	Labourer	R.	„	2 years	—
3	G. R.	M.	36	Surgeon	R.	„	16 years	—

In one case flexion of the great toe formed a part of a deformity of foot due to muscular contracture. I saw this also in another patient, the notes of whose case I am unable to lay my hand on. As, however, these cases in no way bear on the question I wish to elucidate, no further mention will be made of them.

In considering the nature of the cases included in Class 1 we are met by a difficulty common in the determination of most slight affections in young people, viz. the absence of opportunities for post-mortem examination. We are, however, in possession of some positive information, that afforded by the joints excised by Mr. Colley. Here the articular change seems to have been minimal, the only abnormal features being “a worn and fibrous appearance of the cartilage, and thinness of cartilage, with a transverse furrow marking the line in which the dorsal margin of the proximal end of the phalanx had pressed against the head of the metacarpal bone.” I may mention that only changes of a similar trifling nature have been observed in three other cases where I know excision to have been employed. I shall add the description of an ankylosed joint which I secured from a post-mortem subject, for although ankylosed in a straight line it affords, I believe, some explanation of the sequence of events liable to follow the early development of hallux flexus. As will be seen, this specimen showed some signs of rheumatoid arthritis, but the deformity observed seems, notwithstanding, the outcome of a gradual correction of a flexed position by pressure applied

from below, such as might occur in disease of any nature, and especially during the period of the development of the bones. Seen externally the toe was firmly ankylosed in the straight line, but on making a sagittal section the arrangement seen in the diagram was displayed.



The phalanx is slightly displaced downwards, the compact tissue considerably increased on the dorsal aspect, the articular end retaining its normal concavity and increased in extent by slight general lipping. In the upper half, lipping being from the position of the bones impossible, the new bone had taken the form of a marked increase in the amount of compact tissue.

In the metatarsal bone the change is more marked but more atrophic in character. The head, instead of presenting a globular convexity, is sinuous in outline, the portion corresponding to the sclerosed dorsal portion of the phalanx being actually concave, no doubt from the major part of the pressure in progression having been borne by the upper segment of the joint when the head of the phalanx was rested on.

The sesamoid bone is slightly increased in size and in density of structure.

After section one half of the joint was broken open, and the articular cleft was then seen to be perfect, the cartilage smooth and continuous throughout. On microscopic examination the ground substance shows evidence of fibrillation, but with the exception of one or two large atrophic cavities the cellular element is normal.

The synovial membrane is atrophied and practically non-existent.

My own observations have led me to regard the affection

as a periarticular one, the joint proper being either entirely unaffected or only becoming so secondarily and at a late date. With regard to the causation the boot-friction theory propounded by Mr. Colley seems amply sufficient; it is not necessary that the boot should be invariably short, but only stiff and unyielding. With regard to the former particular, however, the long foot possessed by most patients affected with the condition is a point of importance. In relation to this formation of foot also it should be noted that the abnormally long foot is accompanied usually by a correspondingly shallow arch, a condition which the possessor when weakly may instinctively attempt to palliate by a certain amount of flexion of the great toe. The difficulty of actually proving the boot worn to be the cause does not seem of much weight, since the same crops up in most cases of bunion; one could not speak positively on the point unless the boots worn by the patient during the whole period of development of the deformity were before one.

The affection in fact appears to be due to the same causation as bunion, differing in that it develops more acutely, and in young growing subjects, the development of a bursa and abduction being represented by inflammatory effusion in the tissues generally around the joint, and a varying degree of flexion. The genesis of the periarticular infiltration has already been ascribed to boot pressure or friction, and the flexion is, I believe, to be readily explained by its presence, as is also the acute pain and tenderness often existent. As was forcibly pointed out by Mr. Hilton, irritation of the cutaneous nerve-filaments leads usually to contraction of the muscles beneath, deriving nerve supply from the same source, and although in the case before us both the nerves supplying the flexor and extensor muscles are implicated, yet I think the predominance of the flexors may be explained without simply resorting to the usually maintained greater power of that group alone. As has already been noticed in describing the symptoms, the long extensor tendon cannot be made to stand out in prominent relief as is normally the case, and this depends on its being glued down by the inflammatory effusion around the joint. Any effort to use the tendon from this reason causes pain, and is instinctively avoided. The short flexor

muscles, on the other hand, while exposed equally to irritation by reason of the implication of the cutaneous branches supplying the under surface of the ball of the toe, are themselves, from their deep position, much less affected by the mechanical restraint influencing the long extensor tendon due to the periarticular effusion, and hence gain a very decided advantage. This is perhaps supplemented by the tendency to employ flexion to discount the shallow arch of long feet already referred to, which view moreover is supported by the fact that in many cases of acute flat-foot some flexion of the metatarsophalangeal joint is observed.

The evidence in support of the swelling being entirely periarticular may be sought for in the description already given of the clinical characters, where the fact that the enlargement usually exceeds the limits of the articulation has been noted, also the absence of the signs of fluid in the joint, or subsequent synovial thickening. The periarticular effusion moreover well explains the pain and tenderness, especially when viewed in the light of similar signs exhibited in cases of acute flat-foot, where exquisite pain and tenderness on pressure often accompany inflammatory effusion around the head and neck of the astragalus,—pain and tenderness which in fact led Gosselin to look upon the latter affection as an articular one. The tension of certain tendons directed to the raising of one border of the foot is also exactly comparable to the similar condition noticed in flat-foot.

The absence of creaking in many cases, and the rapid relief afforded by treatment, afford further evidence against the arthritic nature of the condition.

Persistence of the position in the absence of treatment may lead to the firm fixation of the joint in its new position, necessitating operative treatment for its relief, but the point referred to by Mr. Colley that these cases are met with in the young alone needs some further comment. Mr. Colley suggests that the cases later develop into hallux valgus, and one of my series lends support to this theory, for such a development really commenced. Looking upon boot pressure as a potent cause also this would seem a natural sequence. I would, however, point to the ankylosed joint already described as an instance of another mode of termination, and also to the

small series of cases in Table 2 as evidence of the subsequent development of rheumatoid arthritis. It must, however, be allowed that both enlargement of the joint ends and creaking might develop, and persist, without being real indications of anything more than organisation of chronic inflammatory effusion.

On this question of persistence two points arise for consideration: 1, the reasons for its occasional presence, and 2, the usual disappearance of the deformity.

Cases in which the malposition becomes a permanent one, such as those in which the joint has been subjected to excision, are capable of explanation on the same grounds as is the permanence of flexion at the knee, or extension of the ankle-joint in talipes equinus, in growing patients. The dorsal section of the head of the metatarsal bone becoming relieved from the normal pressure of the base of the phalanx, develops in greater relative proportion than does the plantar, and meanwhile the structures on the plantar aspect undergo secondary contraction, similar to that seen in inveterate hammer-toe, or in the plantar fascia after division of the tendo Achillis in paralytic cavus. The slackness and weakness of the dorsal expansion moreover offers minimal resistance to this shortening in the absence of proper aid from the more or less fixed extensor tendon.

Disappearance of the deformity other than by the substitution of valgus, also seems capable of ready explanation. If the patient continue to use the foot, or resumes walking on the disappearance of acute tenderness, every step taken tends to diminish the degree of a malposition eminently unsuited to ordinary progression, and a straight position is procured by a mode of treatment the effectiveness of which may well arouse envy in the treatment of other contractions of the limbs. Complete reposition may in this manner be effected, but in all probability this is often detracted from by a varying degree of plantar displacement of the phalanx, such as is well illustrated in the post-mortem specimen already referred to.

In speaking of the prognosis I would emphasise the fact that in all the cases in the above Table who attended long enough, simple fixation in a plaster-of-Paris splint sufficed to effect a cure, and though the experience of others has shown

that this, and even tenotomy, is often insufficient, yet in early cases it is no doubt not only the proper treatment but a hopeful one. In this again the resemblance to flat-foot is patent, while it offers another argument against a real arthritic nature.

The mode of treatment which in my hands has proved successful I would recommend, fixation in a splint until swelling and tenderness has disappeared, followed by the use of well-fitting boots with sufficiently stiff soles and soft upper leathers. In severe cases excision of the head of the metatarsal bone would seem the proper mode of treatment, since tenotomy has proved, in the hands of others, liable to be followed by recurrence in this affection, as it has already been proved to be unsatisfactory in the treatment of some other contractions of the toes.

ON OBSTRUCTION OF THE INFERIOR
VENA CAVA,
WITH CASES.

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OBSTRUCTION of the inferior vena cava is of sufficient rarity to make the discussion of the condition and the effects to which it gives rise one of interest both to the physician and to the surgeon. Notwithstanding what has been stated by Dr. Goodhart in his remarks on a case¹ which had been recently brought before the Pathological Society, to the effect that these cases must not be looked upon as rare because they are not recorded in the literature of the day, and that many could be found if the post-mortem records of the different hospitals were searched, I am inclined to think that they are rare for several reasons, one of the most important of which is that physicians who have brought forward cases at the Pathological or other societies have seldom referred to similar ones which have been under their own care, which they have themselves seen in consultation or under the treatment of colleagues. Searching the literature on the subject I find the references to cases are limited, and some of these have been translated from French or German publications as examples of an unusual disease. The large majority of

¹ 'Med. Times and Gazette,' vol. i, p. 494, 1885.

these recorded cases have been, as one would expect, under the care of the physician or obstetric physician; there are surprisingly few recorded by surgeons, but these are of greater clinical interest. The spread of a thrombus during the course of an attack of pyæmia appears to be the commonest cause of obstruction, whether this be secondary to a septic condition of the uterus, and the extension of a clot to the pelvic veins from that organ, or to blood-poisoning of unexplained origin. Examples of this condition are to be found in the 'Transactions of the Pathological Society,' for instance,¹ Dr. Gibbons: Female, æt. 20, lived eighteen days after symptoms of puerperal fever. Here there was a firm, buff-coloured, fibrinous clot adherent to the walls of the vena cava extending into the iliac and femoral veins. There was also embolism of the middle cerebral artery. Again,² Dr. Hewitt: Female, æt. 33; lived twenty-five days after the onset of puerperal phlebitis. The vena cava was occupied by a loose, imperfectly formed clot of light colour extending into the iliac veins. And another by the late Dr. Moxon:³ A female, who died from pyæmia. *Post-mortem*.—Purulent thrombosis of the inferior vena cava; channel of vena cava imperfectly closed by the clot, which extended into the left renal vein, but there was no suppuration in this kidney. No emaciation, and but little œdema of the lower extremities. Whilst some of my readers will remember the unpublished case of a stout young married woman who died in the Alexandra Ward of St. Thomas's under the care of Mr. Croft during the course of this last summer. She had thrombosis of a puerperal character, with enormous œdematous enlargement of the lower extremities, the œdema, which extended up to the chest posteriorly, being extremely brawny in character. I must also refer to a case mentioned by Warren⁴ as having occurred in the Rotunda Hospital in Dublin, where a thrombus spread from the uterus after the injection of perchloride of iron solution into its interior.

Next in frequency are those cases in which the condition

¹ Vol. v, p. 11.

² Vol. ix, p. 59.

³ Vol. xxi, p. 145.

⁴ 'Trans. of Acad. Med., Ireland,' vol. i, p. 154, 1883.

developed from the pressure of a tumour on the vein, and of these there are examples as follows.¹ Dr. S. Wilks: Vena cava and hepatic vein obstructed by fibrous deposit in the liver. The patient was a sailor, æt. 35, suffering from ascites and swelling of the legs.² Dr. Little: Malignant disease of the liver from a man, æt. 36. Symptoms (not given) for three months; complete occlusion of the vena cava. Reference was also made to another case.³ Dr. Legg brought the case before the Pathological Society⁴ of a man, æt. 60, who had suffered from cardiac disease and phthisis without albuminuria, who died from exhaustion. A clot, partly adherent, starting from the position of a small aneurysm on the left internal iliac artery, extended into the inferior vena cava and internal iliac vein of the other side, but not into the femoral. There had been no definite history or symptoms, but the legs had been swollen eight months before death; the swelling had subsided, but returned during the last three months. Again,⁵ Dr. Turner: Secondary malignant growth of the right kidney invading the inferior vena cava above the junction of the renal vein, from a man, æt. 44. The symptoms due to the obstruction of the large vein are not given. In the same volume⁶ Dr. Colcott Fox: Primary sarcoma of the left suprarenal capsule from a child, æt. 2. In this case the clot extended into the auricle. There had been enlargement of the abdomen for four months, but the collateral venous channels were not markedly dilated. In the 'Lancet'⁷ Dr. Bristowe, in his lectures on "Visceral Syphilis," mentions a case under his care in which enlargement of the veins had been noticed for two years. The disease was in the tertiary stage, and incomplete recovery followed treatment. There was great dilatation of veins in the wall of the chest and abdomen, and other lesions. And Mr. Holmes, in his 'System of Surgery,'⁸ refers to museum specimens.

¹ 'Path. Soc. Trans.,' vol. xiii, p. 122.

² 'Transactions of the Dublin Path. Soc.'

³ Gély, 'Gaz. méd. de Paris,' 1840, No. 45.

⁴ Vol. xxvi, p. 104.

⁵ Vol. xxxvi, p. 275.

⁶ P. 460.

⁷ 1885, vol. i, p. 331.

⁸ Vol. iii, p. 71. Middlesex, series vi, 32, 35, vena cava obliterated by pressure from an aneurysm; St. Thomas's, γ 171, vein filled with encephaloid deposit; Guy's, 1521⁶⁵, vena cava obliterated by the side of a dried-up hepatic abscess,

As an example of thrombosis coming on during the course of other diseases, and possibly as a consequence of changes in the blood, condition of walls of vessels, or rate of circulation produced by such diseases, I may mention the case of a man who was under the care of Dr. Milner Moore, of Coventry,¹ for a fracture of the femur, during the treatment of which pneumonia developed, and thirty-nine days after the accident thrombosis of the left thigh, which spread to the vena cava. There was much œdema and pain. Ultimately the man recovered under treatment, hot fomentations, purgatives, and diuretics. I am indebted to Mr. Mackellar for permission to publish the following case, which was under his care, and markedly illustrates this spreading thrombus.

CASE 1. *Thrombosis of veins of the left leg, subsequently spreading to the right side and involving the inferior vena cava, in an anæmic girl, who died ultimately from thrombosis of the cerebral sinuses.*—A. D—, æt. 19, single, a barmaid, was admitted to No. 24, Elizabeth Ward on the 6th, and died on the 25th of November, 1886. The following account is abstracted from notes by the dresser, Mr. M. H. Spencer :

The family history was good.

Previous history.—She has never had any serious illness, but states that she was laid up with indigestion and “enlarged liver,” six months ago. She has never suffered previously from any pain or swelling in the legs, and has not been subject to varicose veins. The veins of the legs have been prominent but not varicose. She has been in the habit of standing for fifteen hours a day for some time.

Present illness.—On October 29th the patient was first troubled by pain in the left leg ; it was confined at first to the leg and ankle, and there was a good deal of redness about the calf. She did not feel ill, and still kept about on the leg. The pain, however, increased, extending up the inner side of the leg to the groin, and the glands in the groin became very tender and enlarged. The leg at the same time began to

and 1521⁹⁰, by pressure from enlarged glands ; Guy's, 1522^{7, 15, 25}, growth of cancer into superior vena cava ; St. Bartholomew's, 13 and 29, fleshy growth between vena cava and kidney, obliterating the former.

¹ ‘Lancet,’ 1884, vol. i, p. 1026.

swell, and on Thursday the 4th inst. she was obliged to take to her bed. The pain was now very severe, keeping her awake at night. She had medical advice, and the limb was wrapped up in cotton wool. Her bowels are usually constipated, and have been more so lately than usual. The catamenia have always been regular.

On admission, she is an anæmic, rather delicate-looking girl, complaining of pain and swelling in the left thigh and leg. On examination, the left leg is found to be much hotter than the right, and a good deal swollen. The veins in the thigh along Poupart's ligament are injected on the left side. The pain seems to be severe, and the leg is tender on pressure, especially about the calf and above the knee on both the inner and outer sides; the ankle is also tender on pressure. There is distinct pitting on pressure along the inner side of the shaft of the tibia and over the ankle-joint; there is no pitting over the calf, but it feels tense. The tongue is somewhat furred and the bowels are constipated. Pulse regular, rather feeble and compressible. Temp. 102·2°. There was no cardiac murmur.

Perfect rest was enjoined, a brisk aperient given, and the patient placed on fever diet, No. 2, with tea, two eggs, and an ounce of red wine. Glycerine and extract of belladonna was applied to the affected leg.

6th.—Iodide of potassium and a vegetable tonic with chloroform was prescribed.

9th.—Pain not quite so severe. Bowels open. Has passed a good night.

10th.—More pain to-day. Cotton wool only applied to the leg, which still feels much better than the other one.

11th.—Expresses herself as feeling better this morning and has less pain.

13th.—Pain still decreasing, but had some during the night.

15th.—This morning she is complaining of pain in the right leg; it commenced in the groin and spread downwards along the course of the internal saphena vein. There is not much œdema of the limb and no pitting on pressure. The small veins about Poupart's ligament are injected as on the left side. The left leg is better, there is no pain in that now. The œdema has subsided to a large extent. The internal saphena

vein can be felt, but not so distinctly as on Friday last. She suffers much pain in the right leg. Her temperature has risen this morning to $103\cdot2^{\circ}$. Mist. Pot. Citr. Eff. ζj 6tis horis.

16th.—Left leg continues to improve, but the right is more painful and swollen, the pain being greatest in the calf.

17th.—The right leg is still more painful this morning, and there is pain and hardness over the right side of the abdomen, and the superficial veins of that part and the right leg are more dilated. She was ordered five grains of sulphate of quinine three times a day.

18th.—No improvement, pain still very severe, the right leg is a good deal more swollen, and the œdema increases daily, there being distinct pitting on the inner side of the leg, whilst the internal saphena vein can be felt distinctly. The most painful parts are the calf, and the inner side of the thigh, also at a point in the right iliac region parallel to Poupart's ligament. The left leg is now of its normal size, and there is no pain or tenderness on pressure, but the veins over Poupart's ligament continue enlarged. Pil. Opii gr. j, three times a day.

19th.—Rather better, and suffering less pain.

21st.—Diarrhoea, a mixture of chalk and catechu with fifteen minims of Tinct. Opii ordered.

23rd.—Patient complains this morning of very severe headache; she suffered a good deal from it last night. The pain commences at the upper part of the frontal bone and extends over the back of the head to the occiput. The temperature is normal. There is some swelling on the right side of the face, and she has a decayed tooth on that side, but does not complain of toothache. The pain in the head extended down to the back of the neck. An icebag was applied to the head.

24th.—Yesterday afternoon the patient's condition became worse; she vomited several times, the substance brought up on one occasion resembling coffee grounds. She has been very drowsy all night, not answering to questions, and seeming to be unconscious, passing her motions under her. Some slight twitching was noticed in the arms this morning, between seven and eight. The pupils were dilated but sensitive and acting to light and accommodation. There is no hemiplegia

or other paralysis, and she seems to be in a condition from which she might possibly be roused. There has been frequent vomiting, but not of a dark character. Is taking brandy, milk, and eggs. During the evening the temperature began to rise, and the patient's condition became progressively worse. She continued to pass her motions under her. The pupils became less sensitive to light and acted but feebly. She seemed just able to swallow, but there was continued rigidity of jaw, and she had to be fed by a nasal tube. Rigidity of the muscles became at times marked, at other times absent. The legs were drawn up towards the abdomen. The heart-beats were irregular, a number of quick successive beats being followed by a slower rhythm which would then give way to a quicker one. She remained unconscious and quite incapable of being roused. The temperature continued to rise. The breathing as well as the heart-beat became irregular, and she sank rapidly dying, at 6 a.m. of the 25th. The following is the temperature chart :

	a.m.		p.m.		a.m.		p.m.		
6	...	—	...	102·2°	17	...	100·8°	...	103°
7	...	101°	...	102·2°	18	2 a.m.	102°	...	—
8	...	101·8°	...	102°		9.30 „	101·2°	...	101·6°
9	...	101°	...	101·8	19	...	100·2°	...	100°
10	...	100·8°	...	101·4°	20	...	100·4°	...	100°
11	...	100·6°	...	100·4°	21	...	98·6°	...	100·4°
12	...	99·8°	...	100°	22	...	99·4°	...	98·6°
13	...	99·6°	...	99·6°	23	...	98·6°	...	98·8°
14	...	100°	...	100·8°	24	a.m.	100°	2 p.m.	99·8°
15	...	103·2°	...	103·2°			101·2°	11.30	103°
16	...	102·4°	...	103·2°	25	4 a.m.	106·2°	6 a.m.	102·4°

There was some difficulty in obtaining a post-mortem examination, but Dr. S. W. Wheaton, to whom I am indebted for the account, undertook it at short notice and at personal inconvenience. The body was very pale and anæmic. Rigor mortis was present. There was a large amount of subcutaneous fat of a bright yellow colour. There was slight œdema of the legs.

Heart small, muscle pale, valves healthy, large recent branching clot in the pulmonary artery. The lining of the larger arteries was very white and not stained by the blood.

Lungs, great congestion inferiorly. Half a pint of clear fluid was present in the right pleura, but there was no pleurisy. Liver not enlarged, pale, fatty. Spleen, soft, diffuent, not enlarged. Kidneys and suprarenals apparently normal. Uterus, ovaries, bladder, and intestines normal.

On examining the abdominal veins there was thrombosis of the left external iliac vein, softening decolourised clot extending into the vena cava to the level of the renal veins, where it presented a free rounded end. There was thrombosis of both internal iliac veins, evidently more recent. There was also one old thrombus in a uterine vein on the left side, but it did not extend either to the uterus or to the internal iliac vein. On opening the head there was no thrombosis of the superior longitudinal sinus. The surface of the brain was markedly congested. Both venæ Galeni were thrombosed and filled with firm adherent clot, the thrombosis extended to the inferior longitudinal sinus and throughout the left lateral sinus and down the internal jugular vein, it also extended halfway up the right lateral sinus. There was no thrombosis of the cavernous sinuses, and the arteries at the base were normal, but there was a large amount of clear serum at the base, but no excess of fluid in the lateral ventricles. The basal ganglia on both sides, the crura, internal capsules, and parts lining the ventricles were softened, diffuent, and contained scattered hæmorrhages. The rest of the brain was normal. No tubercles were seen.

I am inclined to regard the anæmia in this case, with the altered condition of the blood in the disease, as a predisposing cause of the thrombosis, so many cases of thrombosis of the veins of the lower extremities in young girls have been under my observation during the last few years where this change in the blood was present before the onset of the blood-clotting, and formed a marked feature in the case.¹ The thrombosis of the cerebral veins is such an exceedingly rare condition, excepting in disease of the petrous bone or pyæmia, that the symptoms which it caused will be specially noted.²

I now pass to the consideration of that group of cases

¹ I may say more than this; it is rare to find thrombosis of veins in girls who are not markedly anæmic.

² See Note A.

where the presence of very large and tortuous veins on the surface of the body, and also, in some cases, on the lower extremities, possibly unaccompanied by any other evidence of venous obstruction, attracts the immediate attention of the observer. Eppinger¹ records a case of cicatricial obliteration of the inferior vena cava, with dilatation of the superficial veins, and describes the collateral venous circulation as found post mortem. The following case, which was under the care of Mr. S. Jones, to whom I owe permission to publish it, illustrates fully the point mentioned—the dilatation of superficial veins and other evidences of extensive obstruction to the deep veins.

CASE 2. *Enormous dilatation of the superficial veins of the lower abdomen and thighs, with gangrene of the feet, for which amputation was performed.*—The patient, J. S—, æt. 38, ship's broker, from Liverpool, was admitted on May 14th, 1881, and remained under treatment until April 5th, 1882.

He was a short, rather squarely-built, but somewhat poorly nourished man, with an anxious look. He gave the following history. Until eight years before the date of admission he had been strong and healthy; he then had an attack of typhoid fever, and has not been well since, suffering from cold feet, &c. Three years after the attack of typhoid he had what was called by the medical man who saw him "phlegmasia dolens" of both legs; this was accompanied by swelling of both legs and severe pain across the lumbar region, and later by gangrene of the left foot, which was amputated a few weeks afterwards. The right foot appears to have been unaffected by gangrene until April 5th, 1881, when a small blister formed on the dorsum of the second toe. This gradually sloughed off, and then the gangrene spread to the third and fourth toes, slowly extending with much pain until admission, when there was extending gangrenous condition of all the toes of the right foot, and of the base left after separation of the third; this was most marked in the third, fourth, and fifth toes. There was œdema, redness, and swelling extending from the gangrenous portion up the foot and leg; there was no line of demarcation, and the thin dis-

¹ 'Prager med. Wochenschrift,' Nos. 39, 40, 1876.

charge, of small quantity, was extremely offensive. He complained of great pain, and was in a very irritable condition, sleeping badly. The left foot had been removed at the ankle by Perogoff's operation, and beyond a slightly œdematous condition, the stump appeared healthy. Examination of the thighs and trunk showed greatly dilated and tortuous veins passing from the thighs up to the chest, larger on the right than on the left side, some of them being as large as a finger, gradually diminishing in size until they reached the level of the third rib, when they could no longer be distinctly traced, and it appeared probable that they gradually emptied their contents into the intercostal veins. The veins in each lower extremity were much larger than normal. No tumour could be detected in the abdomen, and the liver and spleen appeared normal; there was no evidence of ascites. The chest was well developed, the lungs apparently normal but emphysematous. The heart was enlarged, but the sounds were normal. Pulse feeble. There was no albuminuria. Skin and hair dry. Temperature normal.

Charcoal and linseed poultice was ordered; changed on May 20th to carbolic oil dressing. Stimulants and opium were also ordered on that date.

It was not until July 11th that the toes had separated, leaving the four outer metatarsal bones bare and projecting, with ligaments still adherent but in a sloughing condition; the granulating surface was commencing to skin over, and was extremely sensitive to touch.

On August 14th the projecting pieces of bone were removed with forceps; this operation caused extension of gangrene on the outer side of the foot, the small slough not separating completely until September 2nd.

By October 19th the condition of the right foot had not improved to any great extent; although the sloughs had separated on the dorsum of the foot, gangrene appeared to be extending very slowly along the sole.

Up to this date the temperature had been almost normal both morning and evening, excepting on the evening of May 31st, when it rose to 100·6°.

Mr. Sydney Jones decided to remove the foot, and performed Syme's amputation (October 19th) with antiseptic

precautions. Ether was the anæsthetic administered. After the operation the patient's temperature fell to 96° , but rose next morning to 98° , the pulse being 106.

24th.—Bowels confined since the 19th, has complained of much pain in the stump, and has been unable to sleep without morphia; the stump is sloughing, and emits a very fetid odour; has vomited several times after food and medicine. Pulse 108, feeble. On the following day antiseptic dressing was left off, and charcoal poultices again employed.

November 1st.—The patient is stronger, though pulse is still very feeble, 100.

5th.—Chlorinated soda again used.

28th.—There has been cellulitis of the leg, for which several incisions were made to let out pus.

December 12th.—The granulating surface being healthy, skin grafting was tried, and two or three of the grafts took; each graft was dipped in boracic acid lotion, placed on the granulating surface, and covered with a piece of gutta-percha tissue; this process was repeated on the 12th and 19th, and several other grafts took.

January 21st, 1882.—A small abscess had formed on the outer side of the leg above the stump. Lotio Zinc. Sulph. to be used as a stump dressing.

February 6th.—The stump was again grafted, the surface exposed being less than the size of a halfpenny. Again grafted on the 18th. The dressing was changed to oxide of zinc ointment on the 10th, and to iodoform powder on the 24th, when the wound was quite dry. On March 30th the line of cicatrix had given, forming three small indolent ulcers, which appeared under the scab caused by the use of the iodoform; warm-water dressing was substituted, and the cicatrix became firm, patient leaving the hospital on April 5th, using knee-rests and crutches to get about.

After the amputation, and until November 5th, the temperature in the evening had an average of 2° higher than that in the morning; afterwards the changes were not important.

I have been unable to trace this patient since he left the hospital, so as to obtain further record of his case, but have been informed that he was alive and in fair health two or three years ago. His symptoms differ from those of others

recorded inasmuch as gangrene of the feet of the moist variety followed the obstruction of the vena cava, and in all probability this formation of gangrene was due to extension of clot into the femoral veins, first on one side and then on the other. From the history it would seem probable that the disease commenced in the vena cava, and the weak heart and poor circulation which followed the attack of typhoid fever had much to do with it, but no exciting cause could be discovered.

This case proves that such a severe affection as complete blocking of the inferior vena cava is not necessarily fatal, and there are others published which prove that a man may even follow his occupation. Mr. G. R. Turner¹ mentions a sailor, æt. 30, under his care at the Seamen's Hospital, who had had enlargement of his veins for twenty years. He was well nourished and muscular, and knew of no cause for the condition. Mr. Mansell Moullin, in 1885, brought a case before the Clinical Society, of a pensioner, æt. 35, suffering from varicose veins and ulceration of left lower extremity, following a fall across a handrail one year and nine months before; enlargement of the veins in the lower abdominal wall was noticed three weeks after the injury. There were three main groups of veins, from which great coils of enormously distended veins stretched upwards, gradually diminishing in size as they reached the thorax; left limb much swollen. Mr. Moullin kindly tried to trace this man so that I might see him, but was unable to do so. A man died under the care of Robin in 1884² of whose case the following is a short extract. The cause was violent exertion while stooping. He lived twenty years after the first symptoms, which were noted by Becquerel. These were, intense lumbar pain lasting six to seven weeks, very severe at first, fever, delirium, extreme abdominal tenderness. The abdomen enlarged and the bowels were constipated. The veins slowly enlarged for two years. The urine was scanty and albuminous and micturition difficult. The onset of dropsy was deferred but general and excessive (renal). It is unique for the treatment adopted by a quack to whose tender mercies he passed later, for the patient was suspended by his hands and feet in a bent position for twelve

¹ 'Lancet' for 1886, vol. i, p. 443.

² 'Archives de Physiologie,' and 'Lancet,' vol. i, p. 1026, 1884.

hours. Profuse diuresis and sweating followed this, and the dropsy diminished, but the circulation continued inadequate in the legs, leading to ulcers, eczema, &c. Death occurred finally from visceral hæmorrhages. Warren¹ describes the condition found post mortem in a man, æt. 22, who had died from typhoid. This man had had characteristic enlargement of the veins of the trunk and lower extremities as long as he could remember, without ascites or albuminuria. A fibrinous vegetation which had undergone calcareous degeneration was found in the vena cava, just below the auricle, attached by a pedicle to the great Eustachian valve and completely adherent. The vena cava was the size of a quill, forming a fibrous cord, from the level of the diaphragm to the entrance of the renal vessels.

The symptoms which follow the blocking of the inferior vena cava are dependent upon the question as to whether this is acute in its onset or gradual; whether the thrombus has formed in the main vein, or extended into it from other veins. They also vary according to the extension of the thrombosis upwards or downwards. The most marked symptom, as already mentioned, is the formation of a plexus or plexuses of enlarged and varicose veins over the abdomen and occasionally in the flanks, the lumbar region, and lower extremities, with the presence in some recorded instances of varicocele, hæmorrhoids, and dilated veins in the penis and scrotum. When this condition, which is described in the case of W. M—, has been once seen it is not likely to be mistaken; the enormous size to which the veins may attain being hardly credible to those who have never seen it. This evidence is well illustrated by a plaster cast in the museum of St. Bartholomew's Hospital, and by a photograph in my possession taken from a man who was under the care of Dr. Gulliver in the out-patient department of St. Thomas's.² It differs in this respect from those instances of enlargement of the hypogastric veins sometimes found in sufferers from varicocele and a varicose state of the veins of the leg. It must be remembered that a diseased condition of the veins of the hypogastric region may be present without obstruction to the

¹ 'Trans. Acad. Med., Ireland,' vol. i, p. 155, 1883.

² See Note B.

current of blood, which normally in them is from above downwards.¹ A healthy married woman came to the outpatient department of St. Thomas's Hospital some months ago, when I was doing duty there, with considerable enlargement of the hypogastric veins and of those in the left labium major; she complained of pain and fulness in these, especially towards the end of the day. The disease was limited to this part of the venous system and relief was given by a specially devised belt. Again, the following case which Mr. S. Jones has kindly permitted me to publish, probably illustrates a local disease of these veins.

CASE 3. Varicose condition of lower abdominal wall; operation; nephritis; recovery.—W. M—, æt. 31, a printer, was admitted under the care of Mr. S. Jones on June 21st, and left on the 15th September, 1888.

Family history.—His father died of rupture of a blood-vessel at the age of twenty-one.

Previous history.—He had scarlatina at the age of thirteen, which resulted in the loss of his left eye a few months later. This was excised at Moorfields. Shortly after recovery from scarlatina, large veins were noticed in the lower part of the abdomen and groins, and three years later these were operated on by Mr. S. Jones. After this they returned, and a second operation was performed three years later by means of red-hot wires passed across the part affected. The varicose veins appeared again four years ago and have been increasing in size since, causing aching pain. He has had what was said to be "acute rheumatism," chiefly affecting the muscles of the back; the first attack was three years ago, the second, one year ago. He was in bed for six weeks on each occasion.

On admission.—A strongly-built, big, stout man. Complained of weight and pain in a series of large veins over the lower abdomen.

These large veins, which varied in size, were some of them as big as the little finger of a man; tortuous and knotted they merged below the umbilical region into two or three main trunks which gradually disappeared about the level of the

¹ See paper on the "Abdominal Veins," 'Trans. International Med. Congress. 1881.'

umbilicus, apparently passing into the thick subcutaneous tissue. They were most numerous above the pubes. The direction of the blood current was not seen. The veins of the trunk elsewhere were not visibly enlarged.

The skin presented several circularly shaped scars, the result of the treatment by hot wire on former occasions. The scrotal veins are enlarged, and there is a very large one in the right inguinal canal. They are much increased in size when the patient stands up. There was no swelling of the leg. General health good. Urine, sp. gr. 1025, acid, no albumen, no sugar.

On July 4th Mr. S. Jones operated and dissected out the enlarged veins, removing at the same time a quantity of subcutaneous fat which surrounded them. One large vein was found extending towards the left groin, and communicating with the left femoral; this was ligatured where it disappeared from view.

The operation was performed with full antiseptic precautions, antiseptic dressings were applied, and a drainage-tube inserted.

Suppuration of the wound followed to a limited extent, and dressing was changed to boracic acid lotion on July 3rd, but the patient continued well until July 25th, when he had a rigor, and his temperature rose to 102.6° . He complained of headache and vomited. Temperature, p.m., 103° .

26th.—Sickness continued. Temp. 101° — 101.6° Was ordered four grains of citrate of caffeine and twenty of salicylate of soda, every two hours.

27th.—Temp. 102.2° — 103° . Milk diet ordered.

On the 28th bismuth mixture was substituted.

30th.—Temp. 98° this morning. Patient feels better. There is nothing in wound to account for the high temperature. The discharge is copious, and a tube is kept in the lower opening.

Aug. 2nd.—Five grains of citrate of caffeine to be taken three times a day.

3rd.—For the last two or three days he has complained of swelling and fulness below the right knee. This is being treated with belladonna and glycerine, and a McIntyre splint has been applied to-day. He complains of much nausea, but

does not vomit often. Forty grains of compound jalap powder at night.

6th.—The œdema of the right leg has increased; splint removed. He was ordered sulphate of quinine.

24th.—The right leg, which has been swung in a cradle since the 7th, is now no longer œdematous. There has been a slight sore over the right shin, but this has healed. There is still a granulating surface of wound, but only slight discharge.

The rise of temperature on July 25th, preceded by a rigor, the frequent and continued vomiting, with a severe headache, made the onset of an attack of erysipelas feared, but the wound looked healthy and there was no enlargement of the inguinal glands. The rigor was not repeated, and no eruption appeared. Nothing could be found to account for his symptoms until a few days had elapsed, when the urine gave evidence of acute renal disease, being of smoky appearance, scanty in amount, containing blood and much albumen.

The citrate of caffenin did not relieve the distressing headache, and the albuminuria only disappeared a few days before he left for home.

This condition may possibly have been due to a venous angioma in the first instance, though the absence of any decided tumour and the distinctness of the individual veins made this doubtful, in spite of the recurrences, whilst the early age at which it developed makes the supposition of disease of the coats simply appear improbable. The swelling of the leg which came on during the after-treatment, may have been caused by extension of a thrombus. It is more difficult to account for the condition of the kidneys, the cause of the attack, and the subsequent recovery of the patient being against the idea of either pyæmia or extension of clot to the renal veins. It is worthy of mention that another man in the ward at the time, who had been admitted for fracture of the leg and concussion of the brain, developed almost exactly the same symptoms and character of urine.

If the clot extends into the deep veins of the leg, and be not of septic origin, there may be much œdema of the limb affected and later enlargement of the superficial veins. Or the interference may lead, as in the second case, that of

W. M—, to gangrene, a rare sequence, or those local diseases found so frequently accompanying varicose veins of a limb.

Various conditions of the dilated abdominal veins, which were not noted in Case 2, must be mentioned as found occasionally in obstruction of the vena cava inferior: 1. The current of the blood can be *seen* to flow from below upwards. 2. The walls of the veins can be made to contract under stimulation. 3. A distinct thrill and bruit can be heard on auscultation. The first of these statements is illustrated in Mr. Mansell Moullin's case, and that of Mr. G. R. Turner, as well as in others. In Robin's case "during life great irritability of the muscular element in the coats of the veins was noticed; they contracted distinctly on stimulation." And in Mr. Moullin's patient, "thrill and bruit in an abdominal swelling, and also in the left lumbar cluster of dilated veins."

In Dr. Colcott Fox's case the thrombus passed into the auricle, but it is rarely found, even in the post-mortem examination of fatal cases, to have extended so far upwards. A more practical question is the amount of interference with the return of blood from the kidneys that can be borne, and it is interesting to read to what extent the renal veins were obstructed by clots of considerable duration, and how the blood was conveyed from such important organs when the main channel for its return was blocked. In Robin's case, where, it will be remembered, there was extensive and general anasarca, from which the man recovered, it was found that the inferior vena cava, from its bifurcation to within three fingers' breadth above the origin of the renal veins, was reduced in size and filled with a calcareous concretion, to which the walls of the vein were united by a dense tissue, although the cavity was not quite obliterated. Both kidneys were greatly enlarged, the right being the seat of many old hæmorrhages. The blood from the right kidney passed partly into the inferior vena cava by the renal vein, which was still permeable, and partly by the inferior diaphragmatic vein. The blood from the left kidney found a freer course by the splenic and inferior diaphragmatic vein. In Dr. Andrews' case, where the obstruction was of considerable, but unknown, duration, "the left renal vein was impervious, the blood from that kidney having been returned partly by a vein passing up into

the left suprarenal capsule, but principally by a large vein passing downwards and backwards to join a venous plexus on the sides of the vertebræ, by means of which the blood from the lower part of the body appeared to have reached the vena azygos, which was of unusual size. The obstruction was due to an organised clot, the vein being converted into a fibrous cord.

In none of the cases, the reports of which I have read, has blocking of both renal veins been found post mortem.

The collateral circulation in these cases of obstruction is easily understood by those possessing a knowledge of the systemic venous circulation, but it may be as well to give the actual condition found on dissection, in a case¹ of elephantiasis orientalis, with cirrhosis of the liver, complicated by blocking of the inferior vena cava near the heart (without œdema). "The vena azygos were as large as the inferior vena cava usually is. The blood being checked when it had arrived within an inch and a half of the auricle, regurgitated into the vena cava, hence its great dilatation, and that of the emulgent, spermatic, hepatic, and especially the lumbar and epigastric veins. One route by which it returned to the heart was by the internal epigastric communicating with the lumbar, mammary, intercostal, and azygos veins and superior cava; another channel, through the lumbar, rachidian, jugular, and vena cava veins. On the left side the superficial epigastric, femoral, iliac, lumbar, smaller vena azygos, great azygos, and superior vena cava, as well as the mammary and intercostals of that side, were channels."

One has been struck, in reading through published cases, with the comparative rarity of swelling of the lower extremities, where complete obstruction of the vena cava has been found after death. It would appear that in some of them no trace of œdema of the legs had been found by the medical attendant, or mentioned by the patient. This is, however, less surprising when we know that the inferior vena cava has been ligatured in animals without the production of such a result.² In all probability it depends, as do the more serious consequences of obstruction of the deep veins, upon the extension

¹ Webb, of Calcutta, referred to by Dr. Colcott Fox.

² 'The Practitioner,' 1883, vol. ii, p. 494, Dr. Brunton.

of the clot downwards to the femoral veins, and the rapidity of its formation. Another very important cause for such œdema of the limbs must be recollected in the interference occasionally met with to the circulation of the kidneys. The presence of ascites would make suspicion point to disease of the liver or heart as at least an accompanying condition.

As a rule, it is not possible to localise the position of the thrombus by abdominal palpation, as nothing can be felt on examination. In Mr. Moullin's case, however, to which reference has been made more than once, an ill-defined tumour could be felt in the abdomen, which was regarded as being caused by the plugged inferior vena cava, with swollen and œdematous tissue around it, but in other cases nothing was found.

The conditions on which obstruction to the return of the blood through the inferior vena cava depend, as recorded in published cases, to which I have had access, are summarised as follows:—The vein may be absent,¹ injured by a fall or by severe strain in bending the body backwards or forwards, or ruptured by external violence,² closed by pressure of tumours from without (including aneurysms) on the vein, blocked by the formation of a concretion in the vein itself, or the extension of a growth into its interior. A thrombus may extend into it from another vein, as a consequence of pyæmia, or form in the vein itself, either from that cause, or the presence of an altered condition of the blood in other diseases, or as an accidental complication during their progress.

The symptoms produced by blocking of the vein are, in addition to those of any pre-existing or accompanying disease, those presented by the blocking of any other vein, altered by the importance of the inferior vena cava in the circulation, and its position in the body. Becquerel gives an account of an acute case, and that is the only one in which such a severe onset was followed by recovery. When less sudden but definite blocking has come on the symptoms of partial interference to the return of the blood stream become evident. Œdema, which usually commences in one lower extremity, is found, the superficial veins become greatly enlarged, even presenting

¹ Dr. Greenfield, 'Lancet,' 1876, vol. i, p. 533.

² Shaw, 'Path. Soc. Trans.,' vol. vii, p. 131.

those peculiarities of change in blood current, presence of thrill, contraction of coats on stimulation, &c., to which I have referred; in eczema, ulcerations, and even gangrene of the feet, the presence of albuminuria from interference with the return of blood by the renal veins, the formation of a tumour in the abdomen in the course of the vein, and a condition of general ill-health.

The prognosis in all cases is most serious, but varies according to the cause of the disease. When the obstruction is due to the spread of a septic thrombus, a fatal result soon and inevitably follows. If the block in the circulation be due to the pressure from without of a tumour, unless this be of the nature of gumma, the prognosis is also bad, but it is not possible to say as to duration of life; the size and rapidity of increase of the growth must be taken into consideration. Supposing a thrombus, not of septic nature, has spread into or formed in the vein, then not only may the patient recover from the first onset of the disease,¹ but he may live for twenty years or more, liable, it is true, to those affections of the lower extremities which may follow slight injuries when the venous circulation is bad, and to general ill-health, but if the disease has shown itself in youth, he may be able to follow the most active of professions, simply exposed to increased danger from the large size of the superficial veins. The risk of embolism during the time that the clot is forming must be recollected as in other instances of intravenous clotting.

As regards treatment, absolute rest in bed must be enforced, not only when the disease is clearly present, but also in those cases of thrombosis of pelvic veins or deep veins of the leg, from which mischief may spread to the inferior vena cava. I need not consider the measures which should be employed when the obstruction is secondary to hepatic or other disease in the abdomen, nor when it is due to those constitutional affections which come for treatment to the physician. The surgeon is called upon chiefly to alleviate those conditions which follow the altered state of the circulation, to apply remedies for eczema or ulceration of the lower extremities, to give relief for hæmorrhoids, or to remove gangrenous portions

¹ Note C.

of the limbs, and here considerable judgment will be called for as to the propriety of simply removing dead tissues, or forming a new stump by amputation. In some cases support by bandages will only be required in order to relieve the feeling of tension, aching, and even pain caused by the over-distended veins, whilst the general health is attended to with care. In many cases there appears to have been no necessity for any support in the way of bandage or elastic appliance.

APPENDIX.

NOTE A. *Thrombosis of the cerebral sinuses.*—Since writing the above, a case of “Idiopathic Thrombosis of the Cerebral Sinuses and Veins of Galen in a Young Woman” has been published (see ‘Lancet,’ 1888, p. 1124, vol. ii) by Dr. Douglas Powell, of the Middlesex Hospital. He does not, however, look upon anæmia as a sufficient cause. Much information on the subject is given in the editorial remarks to Dr. Powell’s case, and in the ‘Lancet’ of the week following, including the following references: Hubner, ‘Ranking’s Abstracts,’ vol. i, 1869, p. 9. Corner, ‘Med. Times and Gaz.,’ vol. i, p. 400, 1858; vol. ii, p. 874, 1881 (Coupland). Bright, ‘Medical Reports,’ vol. ii. Dowse, ‘Lancet,’ vol. i, p. 132, 1876. Bristowe, ‘Diseases of the Nervous System,’ Chap. xii, p. 184. Tuckwell, ‘St. Bartholomew’s Hospital Reports,’ vol. x. Andrew, ‘Trans. Path. Soc.,’ xvi, p. 27. Wilks, ‘Diseases of the Nervous System.’ Church, ‘St. Bartholomew’s Hospital Reports,’ 1869, p. 178. Crisp, ‘Trans. Path. Soc.,’ vol. x. Cruveilhier, Livr. xxxv, p. 1. Dusch, Syden. Soc. ‘Selected Monographs,’ 1861.

NOTE B. *Dilatation of the abdominal veins.*—The curious appearance presented by the dilated and irregularly tortuous veins of the lower abdomen and the thighs, presented by patients suffering from obstruction of the inferior vena cava, has been long recognised. Marcus Aurelius Severinus gave it the name of Caput Medusæ. It is well shown by a plate in the atlas of Cruveilhier (‘Pathological Atlas,’ Livre xvi, pl. 6).

NOTE C. Two cases worth mentioning were under the care of Prof. Kussmaul (‘Med. Times and Gaz.,’ vol. ii, p. 119, 1861). Case 1.—Female, æt. 30. Enlarged veins of the lower extremities and lower abdomen, the thickness of the little finger in places, especially on the outer side of the right thigh, forming thick pads. Current of blood upwards. Followed jaundice connected with immense hydropic condition of the lower extremities fifteen years before. A tumour of the spleen was present. The general health was good, but she suffered from ulcer of the foot. Case 2.—Male, æt. 20. A scrofulous patient

who had suffered from various abscesses. Origin probably due to inflammatory mischief in the pelvis. It followed ascites, œdema of the left leg, scrotum, and right leg; diarrhœa and vomiting persisted for some time. The direction of blood-current could not be seen. His general health was good, but spleen large and glands swollen. The veins extended no higher than the umbilicus. Another case was shown to the Medical Society in 1886 by Mr. Fenwick. He was a soldier, æt. 29. The symptoms followed some time after the passage of pus per rectum, supposed to have come from an hepatic abscess. He applied three years after the first symptoms, when he was in hospital at Rangoon, for ulceration of the legs due to the varicose condition of the veins.

Those interested in this subject may also refer to—

Block, A. 'Ueber obliteration der Vena Cava Inferior,' Jena, 1880 (M. Hemsdorf, 30, p. 80). 'France Méd.,' Paris, 1881, vol. xxviii, p. 194; 1888, vol. i, pp. 410—413. 'Charité Ann.,' 1879, Berlin, 1881, vol. vi, pp. 511—514. 'Med. Jahrsb.' (Wien), 1881, pp. 509—512. 'Med. Berl.,' vol. ii, Demme. 'Med. Wochenschrift,' Nos. 39 and 40, 1876. 'New Orleans Med. and Surg. Journ.,' 1881-2, vol. x, pp. 801—813. 'Med. Gaz.,' New York, 1882, vol. lx, 378.

ON THREE CASES
OF
CEREBRAL ABSCESS IN EMPYEMA.¹

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CASE 1.—The patient was a male, æt. 27, who was admitted under Dr. Gulliver on August 28th, 1884.

The only point to note in the family history was that an uncle and an aunt died of phthisis.

The patient had had no serious ailment until twelve months before admission, when he was seized with pleurisy on the left side. He was in Victoria Park Hospital for three months, and was tapped once, a pint and a half of clear fluid being withdrawn. Since then he had been subject to catarrhal attacks, and had lost flesh. For a month preceding admission he had been sweating freely at night. Two weeks before admission he was seized with shiverings, heat, and sweats, and began to expectorate a large quantity of yellow matter. At the same time he had vomiting and diarrhœa.

On admission, the breath-sounds in front of the left half of the chest were "distant," and the vocal thrill was absent. The left apex behind was thought to be somewhat dull, and a few clicking sounds were audible. Over the lower third of the left back there were the usual signs of effusion. There was

¹ I am indebted to my colleagues for permission to use the three cases recorded in this paper.

also marked succussion on sharp movement. The cardiac impulse was felt to the right of the sternum.

The abdominal organs seemed normal. The urine was free from albumen.

From the day of admission until September 3rd the temperature was moderately high, with slight morning remissions. He had frequent cough, and expectorated non-offensive, muco-purulent matter.

On the 3rd Mr. Pitts removed a portion of the ninth rib in the posterior axillary line. At the operation a quantity of air escaped with a loud whiffing sound, as well as about three quarters of a pint of slightly offensive pus. The operation was performed antiseptically. When the wound was dressed, the same evening, about ten ounces of sweet pus came away. There was some emphysema of the left back.

The next day it was noted that the temperature had not risen above 99° since the operation. He had expectorated viscid frothy fluid with a little muco-pus. The evening of the same day the temperature rose to 101° , and next morning it was 102.8° . For the first time since admission he vomited before food. On the 6th the wound was redressed, and about six ounces of sweet pus were found on the dressing. The vomiting had not recurred, and there had been no headache. The next day he vomited again, and the urine was found to contain a small amount of albumen. Between September 6th and 8th the temperature only rose as high as 100° twice.

On the 21st it was noted that he had again vomited, and that the chest had been dressed twice daily, and syringed each night with eucalyptus lotion. The breath-sounds were audible, but feebly, all over the left chest, and there were crepitations at the left apex posteriorly. The cardiac impulse, however, had not returned to its normal position. The temperature still continued to be slightly above the normal. He continued much in the same state, except that the temperature was somewhat higher, until October 29th, when urticaria came out on the trunk and limbs, and during the day he vomited six times and refused food.

On November 18th it was noted that the pus was still sweet, and the secretion was diminishing. There was marked falling in of the left chest. On the 23rd the note

seemed to indicate that the vomiting was dependent on the cough, which was paroxysmal. On the 26th he was doing so well that he was allowed to sit up in the evening for the first time. On January 6th, 1885, the discharge was said to be slightly offensive. The sinus was to be syringed out twice daily instead of once. Between the 8th and the 12th he complained much of headache, and on the latter day the discharge was fetid. The evening temperature was higher. On February 4th the discharge was said to be about an ounce daily, and to be inoffensive. The temperature for a week had been but slightly above the normal. On March 20th, the discharge being more copious and rather offensive, it was determined to explore the pleural cavity. The pleura was found very much thickened, and the diaphragm had ascended so as to be on a level with the inner opening of the sinus. Mr. Pitts then removed two inches of the same rib that had been already resected, but more posteriorly. Six ounces of blood-stained pus were evacuated. After the operation the temperature still remained 2° or 3° above the normal, but the discharge, though copious, was sweet. He still had occasional headache and vomiting, which was ascribed to the cough. On April 6th it was noted that during the last few days he had had several epileptic fits. He was very drowsy, and there was marked weakness of the left arm and leg and left side of the face. On the 7th he could be roused with difficulty, but made attempts to protrude his tongue when asked. There was obvious left hemiplegia, the paralysis appearing to be more marked in the arm than in the leg. There was no optic neuritis. On the 8th he was thought to have some impairment of sensation on the left arm and left side of face. He was very drowsy and did not speak. He continued in much the same condition until his death on the 11th.

The urine was occasionally examined, and, except on one occasion, was found free from albumen.

Post-mortem examination.—The left pleural cavity contained a very small quantity of pus. The left lung was firmly adherent posteriorly and to the diaphragm, and over the visceral pleura there was a thin layer of recent lymph. On the external surface of the upper lobe of the left lung there was a small perforation, which only passed a little distance into the

organ, and ended in a cul-de-sac. The lung, although containing an excess of connective tissue, was crepitant everywhere. There was no cavity. The bronchi were dilated. The right lung was large, crepitant everywhere, and had simply undergone compensatory enlargement. The bronchi were dilated. The convex surface of the brain was injected, sticky-looking, and somewhat flattened. An abscess, which measured two inches from before backwards by one inch from above downwards, was found to occupy the white matter corresponding to the posterior two thirds of the superior frontal convolution, and the adjoining part of the middle frontal convolution on the right side. The ascending frontal was not involved. There was also an abscess occupying the white matter corresponding to the fore part of the right occipital lobe. It was well defined, measured an inch from before backwards, and contained about an ounce of thick, greenish, offensive pus.

No disease of bone was found on removing the dura mater at the base.

There were no abscesses in any of the other organs.

CASE 2.—The patient was a male, *æt.* 28, who was admitted into St. Thomas's Hospital on December 6th, 1883, under the care of Dr. Stone. In July, 1883, he had "remittent fever" in the East Indies, and this was said to be accompanied by abscess of the liver. In November or beginning of December of the same year the abscess was tapped, and the wound healed in seventeen days. It may be observed, here, however, that no sign of suppuration of the liver, past or present, was found at the autopsy. On December 21st, seventy-one ounces of clear serous fluid were removed by the aspirator, and on the 27th twenty-four ounces of turbid serum were evacuated.

On admission, he had the usual indications of effusion into the right pleural cavity.

On January 21st, 1884, he was again aspirated, and twenty-nine ounces of pus were evacuated; but two days later a portion of the seventh rib, a little anterior to the posterior axillary line, was excised, and drainage employed. His general health improved, though when he left the hospital

in May a small fistula was still left, through which pus discharged itself.

In about two weeks he was again admitted, and remained in the hospital about six months, his condition being practically unchanged. After his discharge he was an inmate of two other hospitals, and in addition he spent some time in Ireland.

In May, 1886, the pus appeared to have re-collected, since a small fistulous opening became established on the right side of the back about two inches from the spine, and on a level with the lower angle of the scapula. Very shortly other openings appeared, through which pus exuded. The discharge now became more profuse, and was frequently offensive; he had severe night-sweats, and began to lose flesh rapidly.

Such was his condition when he was once more admitted into the hospital under Mr. Croft on November 8th, 1886. The right side of the chest had become much contracted, the measurement just above the nipple being $13\frac{1}{4}$ inches, that on the left side being $17\frac{3}{4}$ inches. There was dulness over the right side, except for an area in front which extended from the clavicle to the fourth interspace. Here the resonance was said to be good. Over the greater part prolonged expiration was audible, but at the apex, in front and behind, there was tubular breathing. Over the dull area the breath- and voice-sounds were much diminished. The left lung was resonant, the respiratory sounds abnormally loud, expiration prolonged, and rhonchi were present.

On the 20th it was noted that the wound had been dressed with iodoform since his readmission, the cavity being syringed out with weak carbolic solution. The temperature had been for the most part normal, only reaching 100° on one occasion. The discharge had been free from offensive odour, and had not exceeded two or three ounces daily. The sinus posteriorly had closed up once, and had broken out again after two days. On the 20th, the day when this note was taken, the patient was put under chloroform. Mr. Croft dilated the sinus and introduced the finger. The cavity extended in an upward direction only. The place where the rib had been excised in 1884 could not be felt, new bone

having apparently been formed. About three quarters of an inch was then removed from the rib above the sinus, and a larger drainage-tube than that previously used was introduced so as to reach the most distal part of the cavity. By injection it was found that the cavity did not hold more than three ounces.

During the next two days the cavity was washed out twice daily with boracic acid lotion. The discharge was small in quantity and sweet. It was noted on the 22nd that the patient had been very sick since the operation. During the next week the discharge varied in amount, but was not offensive. He complained of much pain in the chest just in front of the opening. The cavity was still being syringed out twice daily with boracic acid lotion. The temperature since the operation had never risen above 99.6° . On the morning of the 30th the patient suddenly became very pale, but did not lose consciousness. The pulse and respiration were fairly good. He complained of great pain over the region of the liver, resisted efforts to relieve him, and refused to take brandy when offered to him. An injection of ether was given and hot fomentations applied over the abdomen. The wound seemed healthy. He continued much in the same state until December 3rd, when he became delirious and tried to get out of bed.

On the 4th it was noted that he was not so delirious but that he complained of neuralgic pains in the head. The discharge during the last three days had been more profuse, though the wound was healthy. Temperature occasionally rose 1° or rather more above the normal.

It was observed about noon on the 5th that the left arm was weak, and towards evening the paralysis increased.

On the 6th Dr. Mackenzie noted as follows: "The patient lies on back with head and neck turned to right. He is very drowsy, but can easily be roused. The eyes are looking strongly to right. He can be made to look to left, but the eyes immediately return to their first position. The left side of the mouth is partly paralysed, the mouth being drawn to right. The tongue appears to go out straight. The left arm appears to be almost completely paralysed. No voluntary movement obtained. The left leg also is affected.

No voluntary movement. Sphincters not affected. Complains of great pain on right side of head, in situation of right frontal eminence."

On the 11th Dr. Mackenzie again noted: "There is now apparently total anæsthesia on left forearm and hand, and partial anæsthesia over left side of face and neck and left upper arm. On trunk and legs sensation is normal. Still severe headache in right frontal region. Vomiting always after food, sometimes without. Sphincters unaffected."

On the 17th he became unconscious, and it was noted that he had not moved his left leg since the previous day.

He died on December 18th, 1886.

The temperature during the period of the cerebral symptoms was usually normal or subnormal; occasionally it rose 1°, and once reached 100·8°.

Post-mortem examination.—Body emaciated. There was a round, well-defined opening in the right axillary line, a portion of the seventh rib having been excised. There were some firm adhesions over the anterior border of the lung, and over the diaphragm. The rest of the pleural cavity contained two or three ounces of dirty-looking, offensive pus. No communication between lung and pleural cavity. No patent vessel visible. The lung was small but crepitant, except here and there along the posterior border, where it was collapsed. The visceral pleura was thickened. The left pleura was healthy. The left lung was not emphysematous; except for some congestion at the base it was healthy. No tubercles in either lung. Heart normal. Liver was adherent by fibrous tags to the diaphragm. There was no sign of abscess, present or past. The organ was a little granular, not fatty or lardaceous. Spleen eight inches vertically, dark and firm, not lardaceous. Weight 1 lb. 8 oz. Kidneys large, smooth; cortex a little swollen and indistinct; no lardaceous change. Stomach and intestines normal. Spinal cord showed no naked-eye change. Brain injected all over. Occupying the centrum ovale minus and majus of the right hemisphere, just behind the fissure of Rolando, was a globular abscess, two and a half inches in diameter, containing thick, greenish pus, and having a well-defined lining membrane. In the wall of the abscess and in the white matter immediately around it were

small recent hæmorrhages. Externally the abscess reached to the deeper layers of the cortex.

CASE 3.—The patient was a male, æt. 4, who was admitted under Dr. Ord on April 6th, 1887. He had had scarlet fever seven months previously, followed by nephritis. Six weeks before admission an abscess was noticed on the left side of chest, which burst a few days later.

On admission, there were the signs of effusion into the left side of chest, and in the fifth interspace in front there was a sinus through which thick pus exuded. The day after admission an incision was made on the left seventh interspace in the posterior axillary line, and a drainage-tube inserted. This was followed by a free discharge of pus and the child was much relieved. In a few weeks the dulness was confined to the lower part of the left chest behind, and the air entered fairly well.

On June 28th the signs of effusion had increased, and on July 13th a portion of rib was excised to allow freer drainage.

On August 25th it was noted that the wound was syringed daily with chlorinated soda, and on October 5th it was stated that the syringing was done twice daily.

On the 22nd he began to vomit, and this continued for two days. The syringing of the pleural cavity was then omitted.

On the 26th it was noted that he was very apathetic, that the pulse was very feeble, and that he had lost 4 lbs. 6 oz. in weight in nineteen days. Nutrient suppositories were ordered.

On November 5th the note was to the effect that the symptoms above mentioned had persisted, and that he occasionally vomited. For the preceding few days it was stated that he had not spoken with the exception of saying "Yes" or "No" once or twice. He nodded his head in reply to inquiries. He occasionally carried his hand to his head. He did not scream out, there was no paralysis or rigidity, and no unconsciousness. In the afternoon of the 5th he had a sharp attack of epistaxis, and was restless in the night. He died on the 6th.

A few hours previously a copious purpuric rash appeared on the backs of the hands and wrists, and he had melæna. He was conscious up to the last. There was occasional slight fever, but the temperature was usually normal or subnormal.

Post-mortem examination.—The left pleural cavity was closed except for a sinus which ran upwards and backwards from an opening in the eighth intercostal space in the axillary line. There was no retained pus. The left lung was collapsed throughout. In the left frontal lobe there was a globular abscess, an inch and a half in diameter, containing thick, greenish, non-odorous pus; anteriorly it reached to an inch from the tip of the lobe, and above to about three quarters of an inch from the vertex. Membranes and sinuses normal. There were hæmorrhages in most of the organs, and the stomach and intestines contained a good deal of blood.

Remarks.—The occurrence of abscess of the brain is a rare though well-recognised accident in empyema in recent, as well as in long-standing, cases. Various pulmonary conditions have also been described as giving rise to cerebral abscess, and among these conditions the principal are bronchiectasis, phthisis, and pneumonia. In connection with acute pneumonia, however, there is a much commoner form of intracranial suppuration, *i. e.* meningitis. This complication is probably due to the same cause as the occurrence of abscess in empyema and in the other states just mentioned. Huguenin¹ asserts that when meningitis occurs the pneumonia is usually in the stage of purulent infiltration. In the minority the disease has been in the stage of red hepatisation. In two cases in which the pneumonia was in the suppurative stage, he mentions that friable thrombi were found in the pulmonary veins, and that in one instance the thrombi were partially broken down by suppuration. He infers that the puriform material gets into the arterial current, is carried to the pia, and thus sets up inflammation.

The occurrence of secondary abscess of the brain in empyema may be due to a similar cause, though it must be confessed that such an explanation is not altogether satisfactory. It is curious that general infection, in the form of pyæmia, rarely results from empyema, and in all the cases

¹ 'Ziemssen's Cyclopædia,' vol. xii, p. 622.

of abscess of the brain in empyema, which I have found reported, no mention is made of suppurative foci elsewhere in the body.

If infection be by the pulmonary veins and the left side of the heart, it is not easy to understand the absence of abscesses in other organs, such as the spleen and the kidneys. I may mention here, that in the two last cases which I have given in this paper, I examined the pulmonary vessels for the presence of coagula, but I failed to find any evidence of ante-mortem clot. I will now briefly refer to the three cases which form the text of this paper.

In the first it is not unlikely that the empyema had its origin in the tapping of the left pleura a year before his admission, as it would appear from the notes that he had never regained his normal condition since that date. Whatever may have been the duration of the empyema, there can be no doubt that the pus partially evacuated itself through the air passages. When first seen the diagnosis of pyopneumothorax was made by Dr. Gulliver, and this was confirmed by the escape of air and pus at the first operation. As regards the cerebral condition, the points to which attention should be directed are (1) the fact that decided indications of organic brain mischief manifested themselves about two weeks after the second operation for excision of rib; (2) that he began to vomit even before admission, and that he was subject to occasional vomiting until his death; (3) that he did not complain of headache until nearly three and a half months after admission, and that even then it was temporary. These two symptoms, vomiting and headache, though possibly dependent on other and less serious conditions, demand careful attention.

Active symptoms of brain disease extended over a period of only two weeks, and yet the two cerebral abscesses found after death had well-defined walls, and appeared to be of considerable duration. The same is true in the two other cases.

This question of latency has been discussed by Dr. de Havilland Hall in an admirable paper on this subject in the 'Clin. Soc. Trans.,' vol. xvii ("Case of Empyema and Cerebral Abscess"). "From the thickness of the abscess

wall in my case it is clear that the abscess must have existed many months, and the absence of symptoms till towards the end may be explained, I think, by the seat of the lesion, which was situated at a distance from the motor and sensory centres, so that these were apparently not compressed. On this point Huguenin remarks, 'Latencies of absolute completeness have been seen, during which not a single symptom called attention to an intracranial affection. Such cases are very rare, for even if symptoms of localised disease and the like are wanting, a chronic, occasionally exacerbating headache, is rarely absent.'"

The second case which I have given was one of chronic empyema of three years' duration, unaccompanied by any indications of cerebral mischief until a few days after a second operation for excision of rib. I confess that originally I was inclined to infer in this case, as in the other, an association of a causal nature between the operation and the formation of the cerebral abscess. But in this second case the wall of the abscess was so well defined and so thick that it was difficult to assume that it was of acute formation. I have now in my possession water-colour drawings of the brain in these two cases, and the appearances there depicted are such as I have just described.

In the third case, symptoms referable to the brain did not appear until three months after the operation of excision of rib.

It has been urged by some that suppuration of the brain in empyema is connected with the operation of resection of the rib, or with the presence of bare rib; whilst others have been inclined to ascribe the secondary infection to syringing of the pleural cavity. Without denying that these may sometimes be concerned in the production of this unfortunate accident, it must be borne in mind that abscess of the brain has been found in cases in which no operation whatever has been performed. A case of this kind will be found reported by Dr. Robinson in the 'Dublin Hosp. Gazette' for 1859. Dr. Samuel West ('Lancet,' vol. ii, p. 571) narrates a case of abscess of the temporo-sphenoidal lobe in empyema, in which the pleural cavity was tapped twice, but no other operative procedure was adopted.

Before concluding, I will just allude to the possibility of operative interference in these cases of cerebral abscess. Treatment of this kind would be best adapted for cases in which the symptoms point to a localised part of the cerebrum, as in the third patient, in whom aphasia only existed. I cannot help thinking that in the second case operative interference might have been adopted with a fair hope of success. The localisation of the abscess could not, however, be determined with accuracy, the clinical state being one of ordinary hemiplegia. The abscess, however, was of considerable size and would probably have easily been reached at some part or other if an operation had been undertaken.

There is, on the other hand, another view to be taken into consideration in regard to surgical treatment. I refer to the possibility of the abscesses being multiple. This was so in my first case, and I find that in some other reported cases two or more suppurative areas have been found.

Nevertheless, in a considerable proportion the abscess has been solitary, and this fact should receive full weight in the determination of interference or non-interference in subsequent cases.

FOUR CASES
OF
COMPOUND FRACTURE OF SKULL.

REMOVAL OF BONE; RECOVERY.

By H. H. CLUTTON.

It must have been noticed at all our large hospitals that the recoveries after the removal of bone for compound fracture of skull have been much more frequent than they were some years ago. There can be no doubt that this is in great measure due to the more careful manner in which wounds are now treated on the aseptic method. And this has again reacted on surgeons, and induced them more readily to undertake extensive operative measures for cases which would have formerly been treated in a less energetic manner.

Take, for example, the last published volume of our 'Reports,' 1886; there are six cases of compound depressed fracture of skull. All six were either trephined or the bone extensively removed if the fragments were loose, and they all recovered.

The first of these four cases which are recorded in this paper was a gutter-like fracture, most of the fragments of which could have been elevated after the removal of the central part of the depression; but, for reasons which will subsequently appear, all the fragments were removed.

The second case was a punctured fracture which was successfully removed with the trephine and serves only to emphasize the value of this method of treatment.

The third was a long-fissured fracture with depression and extensive injury to brain. The longitudinal sinus was also thought to have been wounded. The trephine was used to raise the depressed margin of the fissure and to remove a fragment which had been driven into the brain.

The fourth was a bullet wound in the frontal region of the skull but without injury to brain.

All the cases made a perfect recovery.

A boy, *æt.* 9, was brought to St. Thomas's Hospital at 9 p.m. on September 16th, 1886, with the following history. At four o'clock in the afternoon of the same day he was running downstairs when he slipped and fell and was picked up unconscious at the bottom. Blood was issuing freely from a scalp wound so that there is no doubt he must have struck his head against some object in his descent. No one, however, saw him fall, and he could not himself remember anything about it. There was a hamper at the foot of the stairs against which his parents think he must have fallen, but there was no evidence to be obtained which in any way could be said to prove the point. He was unconscious for a few minutes and then remained pale and faint. In three quarters of an hour he had a fit in which his eyes, face, and arms are said to have "worked." After this he was sick two or three times and began to revive.

On admission into the hospital at 9 p.m. he was quite conscious and sensible, answering questions very readily, and seemed to have recovered from the shock of the accident. His skin was quite warm and pulse of normal character. There were no signs of paralysis, nor any direct evidence of fractured base.

On examination of the head, a small scalp wound was found about two inches behind the upper margin of the R. concha, from which blood very freely issued upon the removal of the compress which covered it. Between this wound and the ear was a very evident depression of the skull. A probe gently introduced led directly to the seat of depression. The scalp having been already completely shaved and thoroughly scrubbed with soap and water and soaked in a wet carbolic dressing, chloroform was administered. A director being

introduced through the wound, the tissues were freely divided over the seat of depression. The skull was then found to be fractured and considerably depressed below the level of the surrounding bone for about one and three quarter inches in its longest diameter. This area was somewhat gutter-like in form, having in its long diameter a sharply inclined central groove. Some pieces of bone from this central part were very easily removed with a pair of forceps. The question which then arose to my mind was whether the remaining fragments, which were firmly fixed to the dura mater, ought to be merely raised to their normal level or removed entirely from the wound. If the dura mater had been uninjured I think I should have raised them to the level of the surrounding bone, and taken the chance of leaving a compound and suppurating fracture of the skull to subsequently treat. But there were two holes in the dura mater from which small spicules of bone had been removed in taking away the central fragments. I thought therefore that the safest course to pursue was to remove every depressed fragment and obtain primary union of the scalp, and thus avoid the possibility of a suppurating wound and a hernia cerebri. In doing this several small pieces were found between the fragments which would not otherwise have been observed, and would probably have exercised injurious pressure on the dura mater, even after elevation of the larger fragments.

The further details of this case require a very short description. The periosteum having been carefully drawn together with catgut sutures, the scalp was united with the same material and a drainage-tube inserted at the most dependent point. A dressing of iodoform gauze and salicylic wool was applied and the patient sent back to bed. At the end of thirty-six hours the dressing was changed and the drainage-tube removed. The dressing was not again changed till the end of another week, when the wound was found firmly healed. The temperature had never risen above 99°, and he was perfectly free from all symptoms which could cause anxiety. At the end of a month or five weeks he left the hospital with a metal plate to protect the aperture in his skull from any accidental injury.

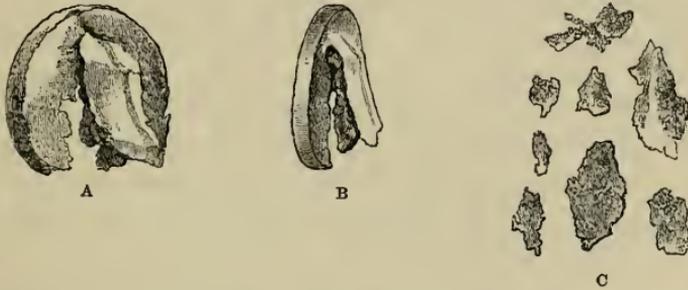
The second case was that of a man, *æt.* 20, who was ad-

mitted into St. Thomas's Hospital on September 20th, 1886, with a punctured fracture of skull over the right parietal bone. About an hour before admission he was carrying a heavy bag of sawdust in a sawmill when he overbalanced himself and fell, striking his head against a circular saw which was not in motion. He was picked up unconscious and brought at once to the hospital. He had been sick, but did not again vomit after admission. I found him lying on his side in bed with his legs drawn up. He would answer questions but only when roused, and when he had answered the particular question he turned round, curled himself up, and evidently wished to be left alone. There was no paralysis.

On examination, I found two small contused scalp wounds over the posterior half of the right parietal bone, the anterior one being two inches behind and on a level with the upper margin of the right concha. A probe introduced through this opening came at once upon a deep groove in the bone, but it was too small to allow an examination with the finger. An attempt having been made to explain the serious nature of his case to him without success, chloroform was administered against his will. The whole scalp was then shaved, scrubbed with soap and water, and as far as possible rendered aseptic with a strong carbolic solution. On enlarging the wound a deep groove in the bone, about one inch long and one eighth of an inch wide, was found, of which one extremity was pointed and deep and the other wide and shallow. The external table could be seen forming the floor of this groove, being driven into and beyond the diploë. It seemed to me therefore almost certain that the inner table must be fractured and depressed. I therefore determined to remove as much of the groove as was possible with the trephine.

The largest trephine in the possession of the hospital was chosen and a circle of bone removed, of which the deepest part of the groove formed the centre. It was very difficult to start the trephine as there was nothing into which to drive the pin. This could have been avoided by applying the trephine on one side of the centre of the groove, but I was extremely anxious to include the deepest part of the depressed area. The circle of bone removed shows the characteristic

depression of the inner table which may occur from a punctured fracture with a pointed instrument. The trephine had just managed to include the whole of this depression and consequently forms a very pretty specimen of this variety of injury. Beneath that part of the groove which had not been removed were a number of small fragments pressing on the dura mater. These were all carefully extracted. The dura mater was then found to be free from any laceration. The wound was closed as in the first case and a drainage-tube inserted.



- A. Circle of bone removed with trephine, showing the hinge-like fracture of the inner table.
B. An oblique view of the same.
C. Fragments of inner table extracted through the trephine hole from the shallower part of the groove.

The wound healed by first intention, and the temperature never rose above 98.6° . But for six days he suffered from symptoms of some cerebral injury. He was surly and drowsy and unwilling to be questioned. The pulse was very slow and he had occasional delirium at night. When quite well he stated that he had no recollection of the accident nor of any of the subsequent proceedings till some days after the operation. I had therefore correctly judged his condition on admission as one in which the refusal to submit to operation need not be seriously considered if it were thought desirable from a surgical point of view.

He left the hospital quite well on October 20th, exactly a month after his admission.

In the second of these two cases no one would, I imagine,

dispute the desirability of removing such a depression of the inner table of the skull as is seen in the specimen.

The third case which I have to record came under my care in the Victoria Hospital for Children on July 1st, 1887. For the notes of this case I am indebted to Dr. Cameron Kidd, who was at that time house surgeon.

A little girl, *æt.* 5, who had been a strong healthy child, was struck on the vertex of the skull by a zinc gutter thirteen feet long which fell from a roof about twenty feet above the ground. She was picked up at once, and cried loudly, complaining of her head, which was bleeding profusely. She was admitted into the Victoria Hospital for Children, one hour after the accident, July 1st, 1887. On admission, she was perfectly conscious, sitting up quietly, answering questions intelligently, and complained of pain in the top and back of head. There were no signs of shock, the pupils were equal and of normal size, and she had not vomited. On examining the skull, a cleanly-cut scalp wound about four inches in length was found running along the vertex slightly to the right and nearly parallel to the median line, the posterior extremity of the wound being one inch and the anterior two inches from the middle line. At the posterior part brain substance could be seen protruding, and subsequently a like protrusion was found in the anterior extremity of the wound.

A long fracture could be felt with the finger, corresponding to, but extending farther anteriorly than, the scalp wound. The outer edge of the fracture was depressed and overlapped by the inner edge along the whole length, most marked posteriorly. In the anterior part there were some hairs tightly held between the fractured surfaces. The head was shaved and temporarily dressed with carbolic gauze. Shortly after admission the child vomited for the first time; no blood. She continued quite conscious and intelligent, crying occasionally. The pupils dilated slightly and equally; no other change.

Chloroform was administered four hours after the accident.

On enlarging the skin wound, a plate of bone about half an inch in diameter was found driven in at the anterior extremity of the long fissure previously described. The depressed bone could be raised with an elevator, but at once resumed its

old level on withdrawing the instrument; the trephine was therefore applied at the anterior extremity. On removing the disc of bone a spicule of inner table was found projecting vertically downwards into the brain-substance. Free hæmorrhage took place, and a quantity of recent blood-clot escaped together with fragments of lacerated brain-substance. The dura mater was extensively torn, and the finger could be passed inwards for more than an inch towards the middle line in close proximity to the longitudinal sinus. The over-hanging edge of the inner lip of the fracture was then removed with saw and bone-forceps. Twice while this was being done most profuse venous hæmorrhage occurred, which looked as if the longitudinal sinus must have been injured. This ceased, however, on applying pressure with a sponge for several minutes. The wound was then thoroughly irrigated with perchloride of mercury solution (1—2000) and closed with silk and catgut sutures; a short wide drainage-tube was inserted at the posterior extremity, and the wound dressed with iodoform gauze and salicylic wool. The operation was performed under the carbolic spray and occupied an hour and twenty minutes. There was some shock, but she quickly rallied without stimulants.

2nd.—Passed a good night. Temp. 101° , vomited twice during the night and four times during the day.

3rd.—Temperature normal. Dressed, tube removed.

7th.—Temperature once reached 100° since the day after operation, now normal. Dressed, wound bulging somewhat, and on removing two stitches anteriorly some broken-down brain-substance removed.

14th.—Temperature has varied between 97° and 98° . Some evidence of optic neuritis discovered on the 11th.

21st.—The wound is bulging towards anterior extremity, where there are some granulations suggesting commencing hernia cerebri. Temperature once reached 99° , otherwise normal or subnormal. Swelling of optic discs subsiding.

25th.—Zinc plate and pressure applied to granulations.

28th.—Temperature varies between 96.6° and 98.4° ; once reached 99.2° .

August 4th.—Temperature normal throughout. The pressure on the granulations has acted well, no bulging; dressed with Ung. Zinc.

15th.—Entirely and soundly healed for now more than a week. No symptoms of any kind of want of brains. Scar with absence of bone for about four inches in length. Pulsation distinct over anterior third.

16th.—Discharged well. The only noticeable effect of the severe injury to the brain she had received was the fact that, although bright and intelligent, she had lost in some degree the moral sense of right and wrong. Her mother made the same complaint when she returned home.

The fourth case was that of a school teacher, æt. 33, who was crossing Clapham Common in a fog, at 8.30 a.m. on October 9th, 1888. He suddenly felt a blow on the forehead, and thought he heard the report of a pistol. He fell to the ground, but did not lose consciousness. He found his face streaming with blood, and walked with assistance to a neighbouring surgery. There a bullet was, with some difficulty, extracted, and the patient advised to proceed at once to St. Thomas's Hospital. The bullet, which he brought with him, looked very much like one that a boy would use in a catapult, for it had one deep notch and a number of flattened impressions, such as might be made by frequently firing against a target, with the amount of force that a catapult could produce. On the other hand, the patient and others in the immediate neighbourhood were quite positive that they heard a "report," and the police were aware of a man prowling about the Common with an old horse pistol. The doctor who extracted the bullet also stated that the notch appeared to be produced by the skull, as it was firmly impacted by the notch on the edge of the broken bone. If the theory of the police were correct, it is possible that the roving lunatic with the horse pistol had been practising with the same bullet at a target, with a small charge of powder, and so produced the numerous small impressions upon its surface. And, as will appear by the characters of the fracture and the degree of penetration, the pistol must either have been fired at a considerable distance, or with a small charge of powder in an old-fashioned, muzzle-loaded weapon. There was no mark of "rifling" on the bullet, which was simply a round lump of lead that an amateur might have fashioned at home.

He had had no symptoms of any kind pointing to injury of the brain, and he did not present any on admission into the hospital. Just above the right eye was a small lacerated wound of the scalp, through which a comminuted fracture of the skull could be seen. The exact position of the fracture appeared to be immediately above the orbital arch (which was not broken), to the outer side of infra-orbital notch, and thus pretty nearly above the centre of the eye. It was thought probable that the frontal sinus was involved.

An anæsthetic having been given, the wound was enlarged outwards, and a more thorough examination made. A very considerable depression of the fragments could then be seen, with pulsation at the outer angle of the wound. It was therefore decided to raise or remove the fragments, as they were most probably pressing on the dura mater, which might be injured. The eyebrow was shaved, and the wound disinfected. None of the fragments were movable, so that the trephine had to be applied to the sound bone at the outer margin of the fracture. The fragments were then easily removed. The inner table was much more extensively comminuted than the outer, but its broken pieces, which were pressing down upon the dura mater, could be pulled out from beneath the outer table after the larger fragments in the centre of the wound had been removed. The frontal sinus was not seen and was therefore probably uninjured. The dura mater appeared at one spot to have been torn, but there was not sufficient evidence of its perforation to justify an incision. A drainage-tube was inserted at the most dependent angle, and the soft parts, including the periosteum, carefully adjusted with silk sutures. Boracic acid powder was rubbed into the skin and the roots of hair, which had been previously removed from the temple and eyebrow. Corrosive sublimate gauze completed the dressing. The highest temperature recorded was 100° F., late the same evening. The dressing was changed for the first time and the tube removed on the 10th, *i. e.* twenty-four hours after the operation. The second dressing was on the 17th, when the wound was found healed. He had no symptoms of any kind worthy of record, the only complaint being a loss of sensation in the scalp supplied by the infra-orbital nerve.

The four cases recorded above occurred between September, 1886, and October, 1888.

During the same time one other case of compound depressed fracture of the vault of the skull came under my care at the Victoria Hospital for Children, in which I was induced to try and relieve the depression by trephining. It was, however, useless, as the history of the case will show, but it may be mentioned here as a contrast to the others, in which the nature of the accident, although severe, was localised to the part struck. For the notes of this case I am indebted to Mr. Staveley, the present house surgeon.

A little girl, *æt.* 3, was brought to the Victoria Hospital on July 7th, 1888, having fallen out of a window, fifty feet from the ground, on to a stone pavement. Such a history, if the head was the part injured, would of itself suggest that the brain was likely to be more or less pulpified and the base fractured. She was unconscious, with stertorous breathing. The left pupil was widely dilated, and the right much contracted. There was a large hæmatoma over the left frontal eminence, and the left upper eyelid and conjunctiva were ecchymosed. She was also bleeding from the nose. Running obliquely from the right parietal eminence to the beginning of the hair on the forehead and to the left of the middle line was a scalp wound, with brain-substance protruding. Fragments of brain were also found in the cloth which had been wrapped round the head.

The surface of the body was warm, and the pulse fairly strong although slow. She vomited a quantity of brown altered blood shortly after admission. As the case was that of a child I thought it desirable to shave the scalp and examine the wound, firstly, because children are much more tolerant than adults of injuries to the brain, and secondly, a child being a light weight the fall would not produce so much indentation as with a larger and heavier body, and thirdly, chloroform would not be necessary as the child was unconscious. Having enlarged the wound, a long fissured and depressed fracture was found running across the vault of skull through the superciliary ridge into the left orbit. The trephine had to be applied if any attempt were made to restore the parts to their normal position. This was done, and the brain found so exten-

sively injured that all hopes of recovery had to be given up. The comminuted fragments of the inner table were removed, and the brain irrigated with weak corrosive sublimate solution. The child lived only two hours after the dressing had been completed. A post-mortem examination was not allowed.

I do not regret having made this exploration, although the presumption obtained from the history of the case was entirely against any successful result. For I think that now and then one might lose a case for the want of such an accurate knowledge of the true state of affairs as an exploratory operation enables the surgeon to obtain. To shave the scalp and enlarge the wound scarcely adds to the danger of the case; however severe it may be, and with our present knowledge of putrefaction, it is an essential part of dressing a scalp wound, even if nothing further can be done. The application of the trephine, however, must add to the shock, but is preferable to leaving a doubtful case to all the terrors of meningitis.

The third case, which may be compared with this unsuccessful one, looked at first sight as if recovery was extremely unlikely, but the accident was produced by a zinc gutter falling on to the head. It was therefore probable that the injury was so far localised that it did not extend to the base. Although the brain was extensively lacerated and escaped in considerable quantity, yet if the base were free from any injury I thought that there was some chance of making the wound aseptic and so obtaining a successful result.

Prolonged efforts were therefore made to remove the splintered inner table throughout the whole length of the fracture, which was a long fissure. A great deal of time was also employed in irrigating and washing away the damaged brain. Consequently the operation occupied nearly an hour and a half, but this time was not misspent if one may judge by the result.

In the first case also it will be noticed that every fragment of bone was removed, whether it apparently pressed inwards or not, on the same ground, namely, that of making sure that the wound should heal rapidly without suppuration. The wisdom of this procedure was seen in the fact that between

the fragments of the comminuted fracture small spicules of bone were projecting downwards towards the dura mater.

Mr. Ballance, in vol. xv of our 'Reports,' has very ably argued in support of this line of treatment. His case, which is very fully reported, was that of a compound comminuted depressed fracture of skull produced by a kick from a horse. He removed all fragments of bone, whether they were loose or not, and left an area of dura mater exposed measuring more than three inches by two and a half. The result was a brilliant success.

I think time will show that this is the wisest course in a compound comminuted fracture in which the dura mater is injured. For in no other way can we insure that the wound will heal without suppuration. And in those cases in which there is no evidence to show whether the dura mater is injured or not, the fragments of bone should be removed for fear that the membrane beneath has been perforated. If it is found intact the patient, it is true, will be deprived of a certain amount of the natural protection to the subsequent accidental injury of the brain; but this is of comparatively slight importance when the greater risk of immediate death from suppurative meningitis has been removed.

If the dura mater is found to be lacerated the operator will not have even this feeling of compunction, as he will know for certain that he has taken the best means of obtaining primary union, and so avoiding suppuration within the skull.

FURTHER NOTES
ON
CERTAIN ARTICLES OF FOOD.

By ALBERT J. BERNAYS.

FOODSTUFFS are very often taken at full value, accepting the quantity of nitrogen therein contained as indicating their correct value as assimilable nitrogenous. Nothing can be more fallacious. A good illustration is afforded by bread made from whole-meal. When this bubble was first blown, it looked as if the whole country were about to be converted. At the time I ventured to say that "it would be better to employ the bran in feeding pigs, and for men to eat it in the transfigured form of fat and lean bacon, than to turn ourselves into a mill for such an ignoble object." As an aperient, whole-meal bread has certain advantages, and as an occasional change from one sort of bread, but it is inadvisable to recommend it for everyday use.

But when we have to deal with an article like MILK we know that the carbonaceous and nitrogenous constituents are directly assimilable. I do not consider that the information about CONDENSED MILKS is as accurately known as should be the case. The variations in their composition are very great. Several are in the market which are skimmed to an extraordinary extent, and no statement is made as to the country

of manufacture. I subjoin the analysis of two such condensed milks, "having a part of the cream taken."

Total solids	...	...	74.55	...	73.64
			<hr/>		<hr/>
Water	...	...	25.45	...	26.36
Fat	...	...	0.67	...	1.18
Lactose	...	...	14.07	...	16.86
Sucrose	...	...	45.93	...	42.40
Ash	...	...	2.22	...	2.49
Casein	...	...	11.66	...	10.71
			<hr/>		<hr/>
			100.00	...	100.00
Total sugars	...	...	60.0	...	59.26
Total solids not fat	...	...	73.88	...	69.97
Milk-solids not fat	...	...	27.95	...	27.57
Condensation	...	...	3 to 1	...	3 to 1
Chlorides as salt	...	...	0.37	...	0.38

Here then is a condensed milk skimmed to the uttermost, or as the labels have it, "a part of the cream taken." Contrasted with the following, the difference is remarkable.

Total solids	...	...	...	...	80.40
					<hr/>
Water	...	...	...	...	19.60
Fat	...	...	...	...	9.35
Lactose	...	...	...	...	15.21
Sucrose	...	...	...	...	38.61
Ash	...	...	...	...	2.07
Casein	...	...	...	...	15.16
					<hr/>
					100.00
Total sugars	...	...	...	...	53.82
Total solids not fat	...	...	...	...	68.98
Milk-solids not fat	...	...	...	...	30.37
Condensation	...	...	...	...	3.3 to 1

A condensed milk more than up to the standard of Somerset House as to butter-fat. Indeed such a standard could not be met with in Switzerland, if indeed anywhere.

Since my last paper on milks as published in the 'St. Thomas's Hospital Reports' of 1884, in which I carried the

contention of 1878 still further, that it is impossible, on the results of an analysis of sour and stale milk, to establish the nature of a milk when fresh, I have had abundant opportunity of enlarging an experience of twenty years. It so obviously depends upon the cleanness of the containing vessel, the presence of air, the time and place of exposure of the milk to the air before the sample was taken, as well as the character of the adulterating water.

The following analyses, previously given, are to the point. A fresh milk gave these results.

Total solids	...	...	...	...	10·64
Water	...	...	...	...	89·36
Fat	...	...	...	...	2·77
Solids not fat	...	...	...	...	7·87
					<hr/> 100·00

I reported it as having 8 per cent. of added water. After six weeks, the milk was analysed at Somerset House :

Non-fatty solids	...	...	...	...	7·83
Fat	...	...	...	...	2·65
Water	...	..	...	...	89·52
					<hr/> 100·00

This milk contains not less than 4 per cent. of added water ! It has only degraded by 0·04.

One more case shall suffice.

A fresh milk gave on analysis :

Total solids	...	...	...	...	9·97
Water	...	...	...	...	90·03
Fat	...	...	...	...	2·65
Solids not fat	...	...	...	...	7·32
					<hr/> 100·00

This milk I gave (for reasons) the amount of water based upon 9 per cent. of solids not fat ; viz. as containing 18 per

cent. of added water. On the lower assumption of 8·7 per cent., this milk would be given as containing 15 per cent. of added water. My analysis was made on November 30th. The milk was analysed at Somerset House and reported upon on the 23rd of January.

Non-fatty solids	...	...	...	6·37
Fat	...	...	...	2·63
Water	...	...	...	91·00
				100·00

This milk contains not less than 15 per cent. of added water! So that taking the standard of the referees at Somerset House, viz. that the original milk should only contain 8·7 per cent. of solids not fat, this milk after seven weeks is calculated with the same correctness as with the fresh milk.

No one would for a moment impugn the correctness of the analysis as performed at Somerset House; it is the judgment which I dispute. In another sample I had given 6 per cent. of added water. After four weeks' keeping, Somerset House referees gave it as not less than 10 per cent. of added water.

In a very notable case of milk-adulteration which I had given in October, 1887, as containing 24 per cent. of added water, I had an opportunity of making an analysis of the samples kept by our Inspector. After six weeks, the deterioration or degradation of the solids not fat only amounted to 0·34 per cent., and of this deterioration in my own sample the degradation amounted to 0·15 per cent. in two days. In this case carbonate of sodium had been systematically employed by defendants, and this very common addition to milks must notably modify any calculation based upon regular degradation of milk.

ON THE
PRESENCE OF PHOSPHATES IN WATER.

BY ALBERT J. BERNAYS.

ALTHOUGH the presence of phosphates in water is no necessary sign of impurity, any more than are chlorides, yet may they be indications of passing change. In what form they are present it is not easy to determine, but we may take it for granted that they are as phosphate of calcium. The so-called insolubility of the salt is not in question, as there is in fact no such thing as insolubility when the small quantity is taken into consideration together with the mass of water. Added to this, we have to remember the chlorides and the carbonic acid which aid the solution.

It was a question to determine in well-filtered Thames water just at the outflow of the Companies' water, whether there was any regularity in the quantity of phosphoric acid; whether there was any connection between vegetable growth in summer and the removal of phosphates; whether there was any increase with abundant water or the reverse; whether there was any indication of sewage contamination. The quantity of water employed in the analysis was never less than two litres, and great care was taken in the separation of silica. The precipitation was first accomplished by acid molybdate, and the phosphate weighed as pyro-phosphate of magnesium.

The analyses were first commenced with regularity in 1884, and have been continued monthly up to the present month of October, 1888. With the exception of the months of April, May, and June, 1885, when the analyses were made but the record temporarily lost, in quite the greater number of cases the phosphate of ammonium and magnesium was distinctly crystalline and unmistakable. The calculation is in terms of fractions of grains per gallon, and the statement is of so much phosphorus as phosphorus pentoxide.

Presence of Phosphates in Thames water.

Phosphorus pentoxide. Grains per gallon.		Phosphorus pentoxide. Grains per gallon.	
1882.		1886.	
November 6th	... 0·0780.	January 4th	... Unweighable.
		February 4th	... 0·0270.
		March 3rd	... 0·0224.
	1884.	April 8th	... 0·0224.
February 6th	... Unweighable.	May 5th	... 0·0133.
March 4th	... Distinctly present.	June 8th	... 0·0672.
April 6th	... Present.	July 6th	... 0·0610.
May 6th	... 0·0042.	August 3rd	... 0·0920.
June 5th	... 0·0330.	September 3rd	... 0·0490.
July 4th	... 0·0450.	October 4th	... 0·0150.
August 6th	... Unweighable.	November	... 0·0220.
September 5th	... Unweighable.	December	... 0·0110.
October 7th	... Distinctly present.		
November 5th	... Unweighable.		
December 4th	... Distinctly present.		
	1885.		1887.
January 6th	... 0·0175.	January ...	... 0·0360.
February 5th	... 0·0224.	February 4th	... 0·0520.
March ...	... 0·0560.	March ...	... Trace.
April ...	... Lost.	April ...	... 0·0300.
May ...	... Lost.	May ...	... 0·0670.
June ...	... Lost.	June ...	... 0·0670.
July ...	... 0·0130.	July ...	... 0·056.
August 6th	... 0·0350.	August 6th	... 0·0385.
September 7th	... 0·0455.	September	... 0·0450.
October 7th	... 0·0560.	October 5th	... 0·0336.
November 4th	... 0·0170.	November 3rd	... 0·0406.
December 6th	... Unweighable.	December 5th	... 0·0560.

Phosphorus pentoxide. Grains per gallon.		Phosphorus pentoxide. Grains per gallon.	
1888.		1888 (<i>continued</i>).	
January 5th	... 0·0780.	June 5th	... 0·0850.
February 4th	... 0·0730.	July	... 0·1070.
March 6th	... 0·0670.	August	... 0·0450.
April 3rd	... 0·0349.	September	... 0·0450.
May 6th	... 0·0350.	October 3rd	... 0·0220.

'These facts are full of interest, and I hope to be able to continue them in the next hospital 'Reports.'

PLAGUES ANCIENT AND MODERN;

OR,

THE BLACK DEATH AND THE SWEATING SICKNESS.¹

By JOSEPH FRANK PAYNE, M.D., F.R.C.P.

I HAVE called this lecture *Plagues Ancient and Modern*, and when I use the word "plague" you will at once perceive that I am not speaking of a disease, or diseases, which we are likely to meet with every day. The name at once calls up before us the image either of a malady peculiar to Oriental lands of which we have read in books of travel, or else of some terrible occurrence in the history of our own country which happened a long time ago, and from which we have no longer anything to fear.

My subject, therefore, you will perhaps think, is somewhat wanting in actuality. But while it is quite true that at the present time and in these favoured regions we need hardly expect to meet with those pestilences which are matters of history, the striking fact to which I desire to draw your attention is this, that if we were able to explore the whole world, we should meet at some place or other with examples of these "historical" diseases. To make this clear we must consider their relations of place on the one hand, and their relations of time on the other.

¹ A lecture delivered at the Parkes Museum of Hygiene, Feb. 16th, 1888.

The study of such relations has of late years given rise to two new branches of medical science, the Geography and the History of Disease. It is impossible in one lecture to attempt to give even the barest outline of these deeply interesting subjects. Nevertheless, by fixing our attention on one or two of the more important of those maladies which are called specific, we may be able to see how closely the geography and the history of disease are related, both to one another, and to the nature of disease in general, and what interesting conclusions not only of medical but of social and political importance may be derived from them.

I will begin, then, by drawing your attention to a few facts relating to the geographical distribution of certain specific diseases. Now, by specific diseases we mean such as are believed and in many instances are proved to be caused by some definite material agent. This material agent is one capable of producing a certain set of symptoms which run a definite course, and by which, therefore, the disease can always be recognised; it is also an agent capable of multiplying itself, so far as we can see, almost indefinitely, so that having generated a disease in one individual it may go on generating the same in an ever-increasing number of others.

It is not necessary for our present purpose to inquire precisely what the nature of this morbid agent may be, but it is doubtless well known to most of those present that such diseases as I am now speaking of are very generally believed to be produced by living organisms. The bacterial or so-called germ theory of disease which recognises the operation of these living agencies is one of increasing interest and importance in medical science. But as it has been quite lately discussed in this room I need not say more on the subject than to attempt to show how far this theory is supported by the general laws of distribution of specific diseases over the world.

I speak first then of the GEOGRAPHY of such diseases. It is not difficult to call to mind examples of diseases which are native in, or peculiar to, certain places. We have, for instance, yellow fever, which is found chiefly in the New World and certain adjacent parts of the Old Continent. It appears to radiate from the Gulf of Mexico as a centre. Sometimes it travels northwards to the rivers and harbours of North

America ; sometimes in the other direction along the South American coast. Sometimes it has crossed the Atlantic to Europe, infecting Spain and Portugal and their southern ports. It has even, in rare cases, travelled as far as our own country and effected a landing in our own harbours, such as Southampton and Swansea. Leprosy, again, though largely distributed over the world, is found only in certain countries. It is widely spread in India, China, and South-Eastern Asia, and is found in many islands of the southern seas. In Europe, on the other hand, it is now confined to a few scattered localities, some in the north as Norway ; some in the south as parts of Italy and Southern Russia ; so that if cases of this disease occur in our own country, or in Central Europe, they are, for the most part, traceable to importation from one of the localities it inhabits. There is, again, a peculiar and formidable disease known as kakké, which is peculiar to Japan and certain parts of the Asiatic Continent.

But we need not go beyond our own island for instances of this geographical limitation of disease. Ague, which was once widely spread, is now found only in limited tracts of certain counties. The swelling of the throat called "goitre," or "Derbyshire neck," is well known to affect the natives of certain mountainous districts only, as is, indeed, recognised in its popular name. Not to multiply instances, I would only mention that the terrible malady which we call specially and definitely "the plague" has a remarkably limited geographical range, being found only, so far as we know, in the following parts of the world : At one station on the North Coast of Africa in the neighbourhood of Benghazi, in one district of Arabia, in certain parts of Persia and the adjacent region of Turkish Arabia, in a few localities of Northern India, and in one district in the South of China.

Now, if we inquire how this remarkable limitation of certain specific diseases to certain definite localities is to be accounted for, the first explanation which will naturally suggest itself is that this limitation must be due to climate ; that is, to temperature, moisture, and other physical conditions. But when we find that such conditions in the several places where any particular disease is found are by no means uniform, and further, that other places presenting the same physical con-

ditions may be free from that disease, it is clear that this explanation cannot suffice. It may, again, be supposed that social habits and circumstances, such as uncleanness, poverty, and the like, may account for the prevalence of special diseases. But a very little consideration again will show that those causes do not supply any adequate explanation. For these depressing conditions may and do exist in many parts of the world without producing in each case the same diseases, and even without producing any specific disease at all. We cannot attribute them either to material or to social causes, any other effect than a negative one, that is to say, they may make the occurrence, or the spread, of certain diseases in certain places impossible. Plague, for instance, does not occur within the tropics, being infallibly destroyed by an air temperature of something over 100 degrees or even less. Yellow fever seldom spreads or at least persists at any considerable distance from the sea or rivers; but these considerations do not in the least explain why the plague is limited to the Old World, or why yellow fever has its chief home in the New, why kakké is confined to Eastern Asia, or why leprosy has, at the present time, no home in Europe except in certain scattered localities.

The whole problem of the geographical distribution of disease is very intricate. Without pretending to give it a definite solution, I would only point out that it is essentially the same as that presented by the geographical distribution of plants and animals. It has long been recognised that the distribution of organic life over the globe is governed by other laws than those of heat and moisture, or any other climatic conditions. The words of Alexander von Humboldt, written many years ago, may even now be worth quoting on this subject:—“Each hemisphere produces plants of different species, and it is not by the diversity of climate alone that we can explain why Equinoctial Africa has no laurels and the New World no heaths; why the tiger is peculiar to Asia and the ornithorhynchus to Australia. The attempts made to explain the distribution of species on the globe by the influence of climate alone take their date from a period when physical geography was still in its infancy.” Since the time of Humboldt much progress has been made in explaining the

geography of organic life, and even if everything cannot be accounted for, it is seen that the broad facts of distribution are referable to two great laws, the law of specific centres and the law of migration. By these laws I mean that species of animals and plants have arisen by evolution in certain spots and regions of the globe, and from these have made their way in many cases to other parts by active or passive migration. That is to say, they have either wandered themselves or been carried; their spread being limited partly by natural obstacles to migration and partly by the fitness or unfitness of any particular region to supply the conditions necessary for their life.

Now, that the same laws govern the distribution of certain specific diseases is a truth less generally recognised, and the problem is obscured by a great number of complications depending upon the wide diffusion of diseases and their connection with migrations of men. But when due allowance is made for this and other causes of irregularity, we say that for what we call "specific diseases" the same laws hold as for species of animals and plants; that they rise at particular centres or in particular regions, and their further distribution is due to migration from these centres or regions into others which offer suitable conditions for their temporary or continued existence.

We must now consider the second of the two aspects of disease which I mentioned just now, namely, the HISTORY of diseases, but it will be only possible to touch upon so much of this subject as has a bearing upon their geography. The history of disease, as a whole, is an almost untrodden field, in which little solid progress has been made except in relation to certain episodes in this history which are generally known by the name of epidemics. By an epidemic we mean the prevalence at a particular time over a wide or a limited area of a malady either entirely new or manifesting itself in an intense and exaggerated form. The study of epidemics has, I need not say, of late years assumed great importance, and is gradually forming itself into a distinct branch of medicine, which has received the name of "epidemiology." The special interest which it possesses for the general public is that it forms a point of contact between

medical science and social science in the widest sense. History and politics have their part in it as well as pathology and practical medicine.

All I can hope to show by a brief glance at the history of some of the great epidemical diseases is to confirm the conclusion that they are governed by the same laws as account for the geographical distribution of plants and animals.

The history of these diseases is essentially one of repeated migrations from certain specific centres. They have existed as so-called endemic or native diseases in certain parts of the world so far back as our knowledge extends. They have spread from these centres at various times, and have made longer or shorter migrations into regions other than their original home. These excursions have sometimes lasted for weeks, sometimes for years, sometimes for centuries, in some instances have ended in what we must call "permanent colonisation."

The best instance of these laws is seen in the history of that most formidable of all epidemic diseases, the plague—a name of dread for centuries, and still capable of causing a panic throughout the civilised world;—the Plague of the Middle Ages, the Plague of London in 1665, the Plague of Southern Russia in 1879, and the plague which still holds its ground in certain districts of the East. By this name I mean a certain definite disease—not merely a destructive epidemic or pestilence. I do not include, for instance, the celebrated Plague of Athens, described by Thucydides, since its true medical character is still uncertain; nor can we say anything more definite about the celebrated pestilence which devastated nearly the whole Roman world in the reign of Marcus Aurelius, though its origin and history show many features characteristic of later epidemics. These diseases were not the plague in the sense in which we now understand it.

The disease which it is now generally agreed to call by that name was first known in Europe in the reign of the Emperor Justinian, and formed part of a great cycle of extraordinary natural phenomena which lasted for fifty years, and which are the theme of a well-known chapter in Gibbon's history. This formidable epidemic was believed to have originated in Egypt about the year A.D. 542. From there it spread in

one direction, westward, along the North of Africa, in another, northward and westward, to Constantinople and over the Continent of Europe. In four years it had made its way over the whole of Gaul, and there is great reason to believe that it spread even to our own country, since the obscure historical notices, which are our only guide, state that destructive pestilences raged at the same time in England and Scotland. Into the symptoms of this disease I need not enter further than to say that they appear to have been the same as have characterised the plague in all its subsequent appearances. In its mode of extension and in its social consequences it had a striking resemblance to the other destructive pestilences which have since at various times spread over Europe. The destruction which it caused was not less terrible than in the great epidemics of later times. In Italy large tracts of country went out of cultivation, and the remnant of the rustic population crowded into the towns. Even to this day the traces of this terrible devastation may be seen in the features of Italian landscape. Ruined homesteads, monuments uncared for, wide tracts of Campagna desolate and poisonous with malaria—all the picturesque incidents of a land falling back into its primitive wildness—these, with which a long succession of painters, from Salvator Rosa to Wilson, have made us familiar, date, we are told, from the ravages of the plague of Justinian. In Northern lands the growth of population and industry have covered up the traces of pestilence as completely as they have covered up the horrors of the battlefield; but Italy, or at least Southern Italy, has never recovered its primitive prosperity. In the Eastern Empire the destruction was even more complete. A good authority—Hæser—calculates that the greater part of the population of the Greek Empire was attacked, and that more than half of those attacked succumbed. The political consequences of this great destruction of human life were not less striking and ineffaceable than the social results. It cannot have been a mere coincidence that it was precisely in the sixth century the Goths were enabled to establish themselves with a firm footing in Northern Italy, and to found there the Kingdom of Lombardy. But notwithstanding, after fifty years of alternate advance and retreat, this great plague

finally subsided. For some centuries after we read of numerous pestilences which may or may not have been the same disease as that of the sixth century ; but a great overwhelming outbreak spreading over the whole of Europe does not appear again till the time of the most formidable of all recorded plagues, the Black Death of the fourteenth century.

This terrible disease was certainly believed by contemporaries to be one new to Europe, and this fact, together with its great destructiveness, tends to support the opinion that the epidemics of preceding centuries which we have been compelled to pass over were not entirely, or perhaps not chiefly, the true plague, as the Black Death, notwithstanding some peculiar features, undoubtedly was. It is, however, noteworthy that while the origin of the plague has generally been thought to be in Egypt, or at least that was the source whence Europe derived it, the origin of the Black Death was almost certainly in Asia. Are we to suppose from this that the plague has two original seats—one in Africa and the other in Asia ? Or may one of these have been derived from the other ? This question we have no materials which enable us positively to answer. The earliest notices of plague in western history dating from the third century undoubtedly lead us back to Africa, Egypt, and the neighbouring lands. But it has now ceased to exist there while it survives in Asia ; and possibly if we could follow the history far enough back we might find that the African was a colony of the Asiatic plague. This, however, is a matter of speculation. What is certain is that Europe has sometimes derived the plague from Africa and sometimes from Asia, and that the epidemics of Asiatic origin have generally been, for some reason, the most destructive. It may, perhaps, be thought, and in fact has often been suggested, that since the disease was already known in Europe its remarkable development in the fourteenth century was of European growth, and did not require any foreign importation ; but for many reasons, which cannot be discussed here, I think such a view would be erroneous and that the Black Death was in a very definite sense imported from Asia. Contemporary records, indeed, put this beyond a doubt.

Mediæval Europe was, of course, profoundly ignorant of

what was happening in the far East; its knowledge of Asia was confined to a few points where the trade of the East and West came in contact. And from one of these points our most certain knowledge of the eastern epidemic was derived. The Crimea and the shores of the Sea of Azoff formed at that time an important trade route between Europe and Asia. In these parts the Italians, especially the Genoese and Venetians, formed settlements where an important trade was carried on with the Tartars. It was here that a Genoese lawyer, Gabriel de Mussis, observed the march of the disease, which he accompanied, or, indeed, helped to convey to Europe. He left behind him a written description of his experiences, which has been published from the original MS., and is a document of most remarkable interest. It will be worth while to give a portion literally translated from his Latin :

He says, " In the year 1346 innumerable tribes of Tartars and Saracens perished in these regions by an inexplicable disease. Whole tracts of country, innumerable provinces, splendid kingdoms, cities, camps, and towns abounding in population, were attacked by a horrible death, and in a short time denuded of their inhabitants. Now a town called Thanna, in the eastern region towards the north, a place trading with Constantinople, was besieged and conquered by a great army of Tartars; and it happened that the Christian merchants, driven out by force, took refuge within the walls of Caffé, which the Genoese had formerly built in that region. Suddenly the infidel tribes of Tartars, collecting from all sides, surrounded the city and besieged the Christians, who were shut up there for nearly three years; when lo! a disease attacked the Tartars, and the whole of the besieging army fell into a state of weakness and disorder so that many thousands of them died daily. It seemed to the besieged Christians as if arrows were shot out of the sky to strike and humble the pride of the infidels, who rapidly died with marks on their bodies and lumps in their joints and several parts, followed by putrid fever; all advice and help of the doctors being of no avail. Whereupon the Tartars, worn out by this pestilential disease, and falling on all sides as if thunderstruck, and seeing that they were perishing hopelessly, ordered the corpses to be placed upon their engines and thrown into the city of Caffé.

Accordingly were the bodies of the dead hurled over the walls, so that the Christians were not able to hide or protect themselves from this danger, although they carried away as many dead as possible and threw them into the sea. But soon the whole air became infected, and the water poisoned, and such a pestilence grew up that scarcely one out of a thousand was able to escape.

“ Thus were the Orientals in all parts, both those who lived on the southern shore and those on the north, struck down by this pestilential disease, and almost all of them died. So great was the mortality that Kathayans, Indians, Persians, Medes, Armenians, Georgians, Turcomans, Arabs, Saracens, and Greeks throughout the whole of the East, gave themselves up to clamour, weeping, and sighs, and remained in this distress from the above-mentioned year to 1348, expecting that the Day of Judgment was at hand.

“ Now, it so happened that a ship left the aforesaid land of Caffè, having on board a few sailors (who were also infected with the pestilential disease), and made for Genoa—some other ships going also to Venice and others to other parts of Christendom. Marvellous to relate, whenever the navigators arrived at any land, as if some malignant spirits accompanied them, wherever they mingled with other men the latter perished. Every city, every town, every country, and their inhabitants of both sexes, poisoned by the pestiferous contagion of the diseased, fell a prey to sudden death, and when one began to be sick, soon falling and dying, he poisoned the whole of the family. Those who came in to bury the bodies perished by the same disease. Thus whole cities and castles were made desolate, and only the waste places themselves were left to mourn for their dead inhabitants.

“ Alas ! when our ships arrived at any city and we entered our houses, our relatives, our connections and neighbours, flocked in to see us from all sides, because we were still in bad health, and out of a thousand who sailed with us scarce ten survived ; but alas ! we carried with us the arrows of death. And while they were embracing and kissing us we could not help pouring out poison from the lips with which we spoke. So they, returning to their houses, soon poisoned their own families, and within three days the whole household, struck

down, succumbed to the dart of death, and the number of the dead increased so much that the ground was not sufficient for their graves. Priests and doctors, whom their great care for the sick compelled to be present at the death-bed, alas! returned home sick themselves, and quickly followed the deceased."

This account, which bears the unmistakable stamp of authenticity, doubtless shows us one route by which the Black Death entered Europe, namely, from China through Tartary, and thence by the Black Sea to the Mediterranean; but there were two other ways by which the disease also approached, namely, by way of Tiflis and Armenia into Asia Minor, and by the way of Mesopotamia and the Euphrates into Egypt.

By all these three routes there can be no doubt that the Eastern pestilence invaded Europe, and it is said to have entered Southern Italy and the Mediterranean a year before the invasion of Northern Italy described by Gabriel de Mussis whom we have quoted.

Without dwelling upon the successive outbreaks which are recorded in several parts of the Continent, I will only say that it reached the West of England while Edward III was king, in the early part of 1348, and towards the close of the year invaded London, where 100,000 people are said to have died, while in 1349 it is heard of in the Midland Counties and East Anglia, after which for ten years or more it prevailed intermittently throughout the country. A striking evidence of the way in which the disease gradually spread farther from its original seat is that Scotland and Ireland were at first exempt, so that in North Britain "the foul death of England" became a proverbial expression. But in later years those countries were also affected. The question will naturally be asked, In what way was the pestilence spread? Was it by direct contagion only, or by indirect contagion through material objects? or was it through the air? or was it possible, as some have imagined, that the disease was not really conveyed at all, but broke out in these different places successively under the influence of some epidemic or generally acting cause? I think there can be no doubt that contagion, that is, contact or association with persons affected with the disease, was the chief means by which healthy persons con-

tracted it, and it was thus that it travelled from one place to another. The facts just mentioned relating to Scotland and Ireland would indeed be enough to show that it did not originate independently in the different countries which it successively affected. But a remarkable fact, often observed also in other epidemics of plague and typhus, is evident from the account quoted just now, namely, that persons not suffering from the disease might be the means of conveying it to others. Thus Gabriel de Mussis clearly states that he himself, not suffering from the plague, although he was in bad health, conveyed contagion to his relatives and neighbours. The same thing has often been observed in the contagion of the terrible gaol fever or typhus, which in former days often spread in courts of justice, from the prisoner in the dock to the judges, lawyers, and other persons in court; so that, for instance, at the celebrated Black Assizes at Oxford in July 1577, 510 men died in a month from an infection caught in the castle and court-house.

But in these cases it must be remembered that the persons who brought the infection, though they had not the disease themselves, yet came from among those who had. Typhus was almost constantly present in gaols, and many persons died of it. But those who escaped, either from not being liable to the complaint, or having gone through it and recovered, were able to give the infection to others, so that there was nothing surprising in the fact that the survivors carried the infection away with them.

The Genoese navigators were the sole survivors of a party, 99 per cent. which had died, presumably of the plague, and the ship which brought them back had doubtless been converted into a floating focus of contagion.

The spread of diseases like plague through the air seems by no means improbable for short distances, such, for instance, as are measured by yards; but there are no facts to show that such a transmission can take place over distances measured by miles. In the main, then, the disease was, as plague is now, transmitted chiefly by personal intercourse.

The general facts of the mortality and devastation caused by the Black Death have so often been recorded that I will only briefly refer to them.

In England it is supposed that one third of the population may have perished in the successive epidemics; and looking at the remarkable statistics collected for certain districts, as, for instance, by Dr. Jessop for East Anglia, this would seem to be probably not an over-statement. Hecker calculates that twenty-five millions of persons, or a quarter of the then population of Europe, died; but such numbers are more or less conjectural.

The consequences were economically most disastrous. In England a great part of the country remained untilled, and the deficiency of labourers was such as to cause a sudden rise of wages which it was repeatedly attempted to check by legislation. However, as good comes out of evil, the scarcity of labour is thought by some authorities, as by Professor Rogers, to have ultimately brought about the final emancipation of the labouring class, by the conversion of serfs into free labourers.

Now let us look for a moment at the progress and decline of plague in Europe. By 1357 there was a manifest cessation of the disease in England, but formidable recurrences took place known as the second and third plagues of Edward III, in 1361 and 1368. The general course of epidemics throughout the Continent was nearly the same. For nearly a century plague continued to recur with great violence in many parts of Europe, and about the middle of the fifteenth century, one hundred years after the Black Death, a formidable wave of pestilence passed over Europe, beginning in the South, which was attributed, and probably with justice, to a fresh importation from the East. But the mortality altogether was much less than in the preceding century.

The sixteenth century would appear at the first glance to have been visited as severely as the preceding ages. Nevertheless, on the whole a decline is observable both in the number and severity of the epidemics. It was generally believed that fresh importations took place from Constantinople and the East. Whether this was strictly true I cannot now consider.

But in the seventeenth century there was a manifest abatement, notwithstanding the occurrence of certain epidemics of almost unexampled severity. By the middle of the century there was a still greater decline, and in the third quarter the

disease had disappeared or was disappearing from the greater part of Western Europe. Eastern Europe continued to be subject to epidemics for a much longer period, and in the extreme East, Constantinople suffered almost up to our own times.

Looking at the broad facts of the prevalence of plague after the Black Death, we see then that there was a frequent recurrence of epidemics for about 300 years. At the end of that time, or in the middle of the seventeenth century, there was a general decline, and after that there was an unmistakable eastward recession, to which law there were only occasional exceptions, which might be compared to the sudden sparks thrown out from a slowly dying fire. Thus Ireland, the westernmost country of Europe, saw its last occurrence of plague in 1651 or 1652. London, as is well known, has not known the plague since 1666. Germany was nearly free at the end of the seventeenth century, but had recurrent epidemics at the beginning of the eighteenth. From this time on the eastward recession is so marked that the limits of successive epidemics may be denoted by the degree of east longitude to which they extended. Thus, in the first decade of the eighteenth century an epidemic is recorded which advanced through Germany and Scandinavia, but did not pass the tenth degree of east longitude. In forty years then, dating from the plague of London, there had been a recession of ten degrees of longitude. The next westward invasion, in 1719, was stopped at about twenty degrees east longitude in Poland. On several subsequent occasions in the eighteenth century the limit line passed through Galicia at about twenty-five degrees east longitude.

Russia, the Danubian Countries, and Turkey, continued to suffer, but at length in 1841 even Constantinople (twenty-nine degrees east longitude) saw the last of plague, and in 1845 it occurred for the last time in Egypt. To this law of eastward limitation there have been only two great exceptions, and one or two of trifling moment, viz. the great epidemic of plague in the South of France in 1720, and that in Sicily in 1743, while once in this century the disease found a temporary lodgment in Italy at Noja. But in all these cases the disease might reasonably be regarded as having been brought direct

from the Levant, and these advances were only the fluctuations of a definite retreat.

Since the middle of this century all the known seats of plague are, with one exception, far to the east,—Persia, Mesopotamia, the Himalayas, China, the only exception being the isolated seat of plague at Benghazi, in Africa.

Now, the general facts given in the above summary cannot be disputed. The history of plague in Europe from the fourteenth century may be compared to a great tidal wave coming in from the east, a period of high water lasting, though with a gradual decrease of the level, for three centuries, and a steady ebb, at first rapid, afterwards more gradual, for two centuries more.

And just as when we watch the tide ebbing a wave now and then of greater than usual force, or aided by some local advantage, will run in farther than the rest, so from time to time in France and Italy the general retreat has been broken by a temporary advance, but for all that the ebb has been in the main continuous.

It seems difficult to explain this in any other way than by supposing that the disease was one indigenous in the East, while in Europe, though nearly acclimatised for centuries, it has been always more or less of an exotic, and required fresh importations from time to time to keep up the stock. I know it is customary to attribute the decline of plague to sanitary improvements alone, supposing that it was formerly generated by the filth and misery of the poor in the Middle Ages. But if this were the sole cause the disease should have declined in proportion to the growth of cleanliness and prosperity, not according to geographical position. This, however, has not been precisely the case. Holland, for instance, accepted the gospel of cleanliness before England, but suffered from the plague even longer; and as I cannot but believe gave us the great plague of 1665. Again, let us consider the social condition of Ireland for many centuries. Here all the circumstances known to foster diseases such as plague, namely, poverty, want of cleanliness and so forth have been unfortunately much more conspicuous than in England, as is shown by the prevalence of the allied disease typhus. But Ireland got the plague later than England and lost it earlier, and, so far as I can trace,

suffered less severely in all the later epidemics; an advantage which can only be attributed to its geographical position, Dublin being about six degrees west of London.

Cleanliness and sanitary measures generally have been arms of priceless value in combating the plague, by making the soil unsuitable for the growth of the specific germ, but they cannot entirely explain its retreat. And another weapon with which plague has been combated is exclusion, or the means generally known as quarantine; the utility of which has also been very great, and of late years, I think, unjustly depreciated. But the true way of stating the case seems to be that with these two great weapons Europe has for centuries been combating an invasion from the East of an Asiatic disease.

Now, in order to test the truth of the assumption that plague has really been an Asiatic disease, let us see if we can still trace it in its Asiatic home, and if there are any facts which lead us to suppose that it is there an indigenous or endemic not an imported malady.

The facts of transmission in the fourteenth century clearly point to Central Asia as having been the source whence we derived the Black Death. In farther Asia there are at the present time, or have been quite recently, two seats of plague, without counting a nearer one in the highlands of Persia and Kurdistan. One seat is in certain parts on the southern slope of the Himalayas in Northern India. Another is in the south of China, in the province of Yunnan and at Pakhoi on the Tongkin Gulf.

Contemporary accounts of the Black Death all refer its origin to some country far in the East, and mostly to Cathay or China, though sometimes to India. Russian contemporary chronicles speak explicitly of the pestilence having first appeared in China. The Mussulman chronicles, which unmistakably record an epidemic contemporaneous with the European Black Death, derive it from the "Land of Darkness," by which they meant the unknown regions in the north of Asia. The Italian travellers speak positively of its prevalence in Tartary, and name also the Cathayans or Chinese as having been devastated by the pestilence.

All these reports mark out the line of advance, as having

been through Tartary, north of the Himalayas, and point to an origin still farther off in Eastern Tartary or China.

Now, the Chinese records confirm this to a certain extent. In the years 1333 to 1347 terrible inundations, such as we have quite recently heard of, produced famine in which four millions of men are said to have perished, and at least one great pestilence, credited with a mortality of five millions, is recorded. All calamities, both social and physical, seem to happen in that country on a stupendous scale.

It seems, therefore, not unreasonable to suppose that in these Chinese pestilences we have the starting-point of the great invasion of plague from the East, especially if we remember that the movement of population through Asia was always westward.

The only other hypothesis is that to which Professor Hirsch has given the authority of his great name:—That the great pandemic pestilence started from its home in Northern India. This is quite possible, and it may be doubtful to which theory we ought to give the preference.

The chief objection to the latter is that the wave of pestilence must either have crossed the Himalayas northward (which was not in the direction of the current of human intercourse), or else have traversed the plains of India; which from their torrid climate are known to be inimical to, or even destructive of, the germs of plague, unable as these are to bear a tropical temperature.

Both the modern Chinese and the modern Himalayan plagues precisely agree in symptoms with the European plague of the Middle Ages, and have some features in common with that special outbreak called the Black Death.

In both places there is one remarkable feature. The plague seems to exist in the soil. When an epidemic is beginning, rats are seen to come out of their holes and die, while cats, dogs, cattle, and other animals are afterwards affected as well as men. This seems to show that one has tracked the plague to its original home in the earth. Whether this original home be India or China, it is startling to find the old historical disease existing in places, the distance of which from us in space is comparable to the interval of time which separates the present from the days of Edward III.

One other historical pestilence supplies us with an instance of a migratory epidemic which may still be found in its original home, namely, the celebrated SWEATING SICKNESS.

We read in the English histories that a terrible sickness broke out in or around the foreign army with which Henry of Richmond gained the victory of Bosworth Field, and soon afterwards passed to London, where it produced great mortality, causing the coronation of Henry VII to be put off, and ultimately spread all over the country producing great consternation.

To the doctors as well as to the people it was a new and unheard-of malady, as is shown by some of the quaint popular names which it received. From a parish register of later date is quoted the following entry: "The Sweat, called New Acquaintance, alias Stoupe Knave and Know thy Master! began the twenty-fourth day of the month." It disappeared after a few months, however, but occurred again on several occasions, once in the reign of Henry VII (1507), twice in the next reign (1517 and 1528), and finally once more when Edward VI was king in 1551. On this last occasion it was observed by John Caius, an English physician, who wrote the only medical description of the disease in this country which we have.

Three of these epidemics passed over to the Continent, two only as far as Calais and Flanders, but one of them, that of 1528, made the name of the English sweat terrible from the Alps almost to the North Cape. Hamburg was the point where it broke ground on the Continent, and a German ship returning from England was the carrier of contagion.

In a short time, with the same rapidity as that with which it had traversed England, it had passed southwards as far as Switzerland, northwards to all the Scandinavian countries, eastwards to Russia, and westwards into Holland and Flanders. France alone—and here we have a memorable exception—France alone of all the northern countries escaped. But the malady never spread south of the Alps.

I cannot, of course, dwell on the symptoms of this strange disease, but only notice one or two points; the remarkable perspirations which gave it its name; the extraordinary acuteness of the disease, which was often fatal in two or three

hours, and the rapidity with which it spread from one place to another, so that in each spot the visitation lasted only a short time, usually not more than a fortnight.

It was especially fatal to robust, free-living persons, not to the poor and weakly; in the words of Caius, "either to men of wealth, ease, and welfare, or of the poorer sort, such as were idle persons, good ale drinkers, and taverne-haunters."

Hence I suppose the nickname quoted just now, "Stoupe Knave and Know thy Master." Certainly many men of rank and note were among the victims.

Since the year 1551 the sweating sickness has been quite unknown in this country, and in its old terrible shape equally unknown on the Continent.

Are we then justified in saying that this historical pestilence, like the Black Death, still exists as a living disease in some part of the world? Undoubtedly a malady does exist which bears a very close resemblance to the old disease, though less severe. It is a native or indigenous disease in certain parts of France and of South Germany, and is known by the name of the sweat of Picardie, or in German Schweiss-Friesel.

Though not clearly distinguished till about 200 years ago, there can be little doubt that it prevailed there long before. More than 170 distinct outbreaks have been recorded, the latest of which took place only last year, in 1887.

What if this disease should have been prevalent in northern France when Richmond brought over his mercenaries, and if this should have been the starting-point of the terrible English sweat? This is probably the true statement of the case, though there are certain obvious difficulties which have to be faced. First, that the French soldiers whom we suppose to have brought the malady are not said to have been infected with any disease. But we have seen, in speaking of the Black Death, that those coming from an infected place may bring a disease which either they have never taken themselves or have had and recovered from. Next, why was the English epidemical disease so much more severe than the French indigenous disease?

Here it must be said that the differences between the two, which I do not discuss here, are differences of degree; and

on one occasion in South Germany a short outbreak of the modern disease presented symptoms precisely corresponding both in nature and severity to the historical English epidemic.

Moreover, it is a general law that when a specific disease is introduced among a population which has never been subject to it before, and which offers a virgin soil for its growth, it is more severe than in a country where it is at home, and where the population has become inured to the infection. Not many years ago a striking instance of this law was seen in the Fiji Islands, when European measles was introduced there, and spread with such rapidity and wrought such frightful destruction, that thousands perished from the attacks of the familiar and not much dreaded visitant of our nurseries.

Now, I suppose the French sweat to have been to the English people what measles was to the Fijians ; it became a malignant pestilence instead of a common and comparatively mild disease.

Another remarkable fact in the history of the sweating sickness receives on the same theory a partial explanation, namely, that France itself, though supposed to have been the cradle of the disease, did not suffer when Northern Europe was ravaged by the epidemic of 1528. This would be due, on the view I am supposing, to the French people being inured to the disease in a milder form and thus protected. Germany and Scandinavia, on the other hand, were as little protected as England, and when they once received the infection suffered accordingly.

Time does not permit the further discussion of this interesting question. But if I am right we have here another instance of the intimate connection between the geography and the history of specific diseases. Here also we have a disease of historical interest presenting itself in modern times as a native indigenous disorder. These modern plagues are old foes with a new face, fortunately a somewhat less terrible one than they showed of yore.

APPENDIX.

As the foregoing lecture was intended chiefly for a non-medical audience, I did not enter into any particulars necessary to prove the identity of the ancient and modern diseases which are compared together. But as the recent outbreaks of the sweating disease in France have excited much interest, it may be worth while to place some contemporary notices of its nature and symptoms side by side with the account of the English sweating sickness, as described by John Caius.

The little tract on the disease written in English by the great Cambridge physician, has been reprinted by the Old Sydenham Society as a supplement to Dr. Babington's translation of Hecker's 'Epidemics of the Middle Ages.' His Latin treatise, 'De Ephemera Britannica,' is less known, but as it is more scientific than the other, being intended for the medical profession, and gives a much more precise account of the symptoms, I shall make a quotation from that as well.

In his English tract, 'A Counsell against the Sweate,' Caius gives a striking account of the suddenness and rapidity of the attack. "This disease," he says, "for the sudden sharpness and unwont cruelty, passed the pestilence. For this commonly giveth three or four, often seven, sometime nine, sometime fourteen days respect, to whom it vexeth. But that [the sweating sickness] immediately killed some in opening their windows, some in playing with children in their street doors, some in one hour, many in two it destroyed, and at the longest, to them that merrily dined, it gave a sorrowful supper. As it found them so it took them, some in sleep, some in wake, some in mirth, some in care, some fasting and some full, some busy and some idle, and in one house sometime three, sometime five, sometime seven, sometime eight, sometime more sometime all, of the which, if the half in every town escaped, it was thought great favour."

He maintains that it should be called, not the sweat merely, but ephemera, or a fever of one natural day. And of the symptoms of this fever he gives the following account :

"Quos ista (febris) invasit, istis modis torsit. Primo insultu aliis cervices aut scapulas, aliis crus aut brachium

occupavit. Aliis sensus erat veluti spiritus aut flatus calidi per membra ea discurrentis. Una cum his subitus et sine manifestâ causâ huic morbo insuetis largus sudor manavit. Interiora calebant primo, postea ardebant, calore jam inde ad extimas corporis partes diffuso. Sitis ingens, jactatio inquieta. Cor, jecur, atque stomachum male morbus habuit. Haec omnia subsecutus est gravis dolor capitis, vanum loquaxque delirium, post marcor, et inexpugnabilis pene dormiendi necessitas.

“Rursum, aliis, principio cohibitus sudor est, frigeabant membra leviter; at postea erupit idem promotus, sed odore gravis, colore in alio alius pro humore ratione, quantitate subinde diminutus, subinde copiosus, substantiâ crassus. Aliis nausea, aliis vomitus erat, sed perpaucis, et pene solis ex cibo saturis. Omnes spiritum gravem et frequentem, vocem gemibundam expedivere. Urina colore tincta leviter, consistentia crassior, levamento ambigua, (nulla enim erat naturæ regula propter veneni impetum) caetera pro naturali. Pulsus, si quis prætentat, concitator, frequentior. Haec certa morbi indicia erant.

“Quamobrem quibus sive his notis, sive mitioribus, sive asperioribus profluxit sudor (profluxit autem plurimis) id evenisse censeo non ratione morbi, sed ætatis, vestium, metus, vini, cibi, affectus animi, exercitii, temporis, (etenim vigeabat maxime sub ardente Syrio ardoribus jam omnia obsidentibus) aut certe ratione differentis vel levis causæ. Nam quibus remissior fuerat aëris pestis, et ex corpore minor occasio ipsa quoque temperatior noxa erat, et nihil amplius quam corpus levi calore sudoreque blando tentabat.”

LA SLETTE MILIAIRE IN FRANCE.

To compare with these accounts of the old sweating sickness I will quote a description of the modern epidemic, as it was observed in certain districts of France in the years 1886–87. There have been many accounts of this epidemic, but it will be sufficient to quote one. I select, then, a very full description by M. Emile Parmentier of the epidemic of Slette Miliare in the canton of Lussac-les-Chateaux, a rural district in

the Department of Vienne, a part of the old province of Poitou.¹

The population of the district was about 10,000, among which there 1200 cases of illness, and 130 deaths. In some places a quarter of the population was attacked, and 10 per cent. of the cases were fatal; but in others the proportion of cases, and the mortality were less.

The malady was evidently contagious, being carried from one village to another. It attacked all ages and all classes, but pregnant and suckling women were affected with special severity.

Symptoms.—In a few instances only were there any prodromal symptoms. In three fourths of the cases the onset was very sudden. The patient, who was quite well the day before, woke up in the night bathed in sweat, sometimes accompanied by shivers. Then followed oppression and palpitation.

The next day there were febrile symptoms,—white tongue, anorexia, the conjunctiva sometimes injected, and headache. The pulse was normal, or 80 to 90, the temperature 99·5° to 102° F., rarely higher, the urine scanty and high coloured, the skin bathed in perspiration. The chief complaint was of oppression, palpitation of the heart, and general weakness.

In the evening of the second day there was slight increase of fever, and the patient began to be anxious and agitated, till at 10 or 11 p.m. he became affected with a series of attacks of suffocation, as if an enormous weight pressed upon his chest and prevented his breathing. In severe cases the anxiety and feeling of impending death were terrible. The sweats continued to be abundant, but at daybreak there was an improvement.

During the next day the symptoms were the same, but with less severity. The urine became more and more scanty till it fell to 300 or 400 grammes daily. This was the history of the first three days.

Eruption.—On the night of the third or fourth day the patient felt tingling sensations at various parts of the body. The agitation and feeling of oppression became more intense, and the fever higher. These symptoms were the signal of

¹ 'Revue de Médecine,' Sept., 1887, p. 725.

the outbreak of the miliary eruption. Vesicles appeared first on the back and buttocks, next on the chest and forearms. The eruption was rarely complete at once, but usually appeared in two or three crops with an interval of twelve hours between each, and each was accompanied by fits of suffocation and renewed sweats.

The rash consisted either of clear vesicles, *white miliaria*, or vesicles surrounded by a red areola, *red miliaria*, or began with red spots like those of measles, afterwards becoming vesicular,—the *rubeolic* form. Sometimes all these were combined.

The other symptoms continued till about the sixth or seventh day, when there was some improvement. The sweats diminished, the respiratory troubles were less, the temperature declined, and the urine became more abundant. At the same time the liquid of the vesicles became turbid and milky.

From the tenth or twelfth day desquamation commenced, the epidermis being thrown off either in branny scales or in sheets.

From this time the sweats ceased or nearly so, the oppression on the chest disappeared, and all the other symptoms became ameliorated.

A critical polyuria took place generally on the second day of desquamation, the urine becoming increased up to two litres or more, and the urea in proportion. After this the patient became convalescent.

With regard to the sweats, it is noted that they were generally abundant, but not very excessive, unless, as was often the case, the patients were injudiciously buried in feather beds, and smothered up in blankets or quilts. The doctors had difficulty in combating the popular belief that the excessive sweating thus induced was beneficial. The fœtid odour of the perspiration sometimes observed was due entirely or chiefly to want of cleanliness.

The period of incubation was very variable,—from two to six or eight days after receiving the infection. The disease was certainly not caused by malarial poisoning, but was clearly transmissible by direct contagion. Indirect contagion, by means of clothes and other objects was also recognised, and even an infection of the soil was thought possible. The

infection from dead bodies was thought to have a special potency.

The question whether the modern French is the same as the old English disease is one on which the reader may be left to form his own opinion. I will only say that on comparing the above description with that given by Caius of the English sweat, it seems to me evident that there is a great general resemblance, but with at least two points of difference, viz. the longer duration of the modern as compared with the old disease, and the presence of a miliary eruption, which is not described in connection with the historical sweating sickness. It seems, perhaps, not quite impossible that this may have escaped the less minute observation of the sixteenth century, or, on the other hand, it may have been absent on account of the short and rapid course of the old disease.

A more precise parallel with the English sweat is presented by a singular isolated epidemic which broke out at Röttingen, a small town of Franconia in Germany, in November, 1802, and lasted for ten days only, having never been observed there before or since.

The following account of the disease by an eye-witness is quoted in Hecker's '*Epidemics of the Middle Ages*:'¹ "Strong, vigorous young men were suddenly seized with unspeakable dread; the heart became agitated and beat violently against the ribs, a profuse, sour, ill-smelling perspiration broke out over the whole body, and at the same time they experienced a lacerating pain in the nape of the neck, as if a violent rheumatic fever had taken possession of the tendinous tissues. This pain ceased sometimes very quickly, and if it then shifted to the chest the distressing palpitation of the heart recommenced, a spasmodic trembling of the whole body ensued, the sufferers fainted, their limbs became rigid, and thus they breathed their last. In most cases all this occurred within four and twenty hours. They did not all, however, succumb under the first attack, but as soon as the

¹ Babington's translation, 3rd edition, 1859, p. 301.

accelerated pulse had sunk to the lowest ebb of smallness and feebleness, a corresponding effect being observable in the respiration, the violent pain would in some cases return to the outward parts. The patient then felt a benumbing pressure and stiffness in the nape of the neck, and the pulse and respiration became restored again as in health, but the perspiration continued to pour incessantly down the skin.

“This apparent safety was, however, very deceptive, for a renewed palpitation of the heart unexpectedly commenced, accompanied by a feeble pulse, and then death was often inevitable. It was remarkable that the patients, though bathed in perspiration, had very little thirst, and the tongue was not dry, nor ever even foul, but retained its natural moisture. With most, however, the urine was scanty, as the skin, under the increasing debility, permitted too much fluid to stream through its pores. If the disease passed off without heating sudorifics then, in general, no eruption made its appearance. The malady then continued till the sixth day, but on the first only did it display its malignant symptoms, for by the second the sweating diminished and lost every unfavorable quality, so that increased transpiration of the skin, without any other symptoms of importance, alone remained, and on the sixth day the patient was perfectly restored.”

This Röttingen sweating sickness seems to have been nothing else than the English sweat over again, but how it came to break out suddenly after a sleep of nearly 300 years, and then as suddenly to pass into oblivion again, are questions to which no answer can be given.¹

¹ For further information on the subject of this lecture I may refer to my articles on “Plague” and “Sweating Sickness” in the ‘*Encyclopædia Britannica*.’

FOUR CASES OF CHRONIC EAR DISEASE

FOLLOWED BY

INTRACRANIAL COMPLICATIONS AND DEATH.

BY JOHN S. BRISTOWE, M.D., F.R.S.

THE four cases which form the basis of this short paper were all admitted under my care into St. Thomas's Hospital within a period of a few months, and the three which are of chief interest within a period of three weeks.

The latter three were almost identical in all their most important features. The patients were adults who had suffered from deafness, and no doubt from occasional earache and discharge, for years. The attacks which proved fatal varied in duration from sixteen to nineteen days. They began with pain in or about one of the ears, attended with more or less abundant discharge; and the symptoms which were exhibited while under observation were mainly pain, not so much in the ear as on the corresponding side of the head and at the back of the head and neck, tenderness about the mastoid process, and tenderness and swelling in the course of the internal jugular vein, pyæmic temperature running up in two of the cases to $107\cdot2^{\circ}$ and $107\cdot4^{\circ}$ respectively, and in the other to $105\cdot4^{\circ}$, associated with frequent rigors, occasional slight rambling, and towards the close drowsiness and coma. There were no fits, and, with one exception, no paralysis, and

there was no affection of the pupils or fundi of the eyes. The exception referred to was the coming on of paralysis of one of the external recti in one of the cases. The symptoms, in fact, were rather those of pyæmia or septicæmia than those of cerebral disease. Had it not been for the presence of obvious ear disease and of pain in and about the head, and of tenderness and swelling in the course of the internal jugular vein, there would have been little, if anything, to justify the diagnosis of intracranial lesion. Further, in all of them the main affections discovered after death were, in addition to disease of the ear, thrombosis of the lateral sinus, and more or less distinct evidence of the presence of pyæmia or septicæmia. In the case in which paralysis of one of the external recti was noticed, there was, additionally to affection of the lateral sinus, some inflammation of the meninges in the neighbourhood of the sella turcica, involving the sixth nerve of the same side, and slight softening in the cerebellum.

The fourth case, which was also one of chronic ear disease, differed from the others in the facts, that the patient was suffering from tuberculosis (the ear disease and chronic disease of the hip being probably both tubercular), and that his ear disease induced, not inflammation of the lateral sinus, but diffused meningitis, and an abscess in the temporo-sphenoidal lobe. The fatal symptoms, indeed, were mainly those of meningitis, and (coming on only the day before death) some evidence of hemiplegia, due, doubtless, to the presence of the cerebral abscess.

I may add that in all of the cases, according to my recollection, the question of operative interference was considered, and, after due consideration, in each case was abandoned on grounds that seemed to be sufficient.

CASE 1. *Chronic ear disease; suppuration in lateral sinus and internal jugular; pyæmic temperature with rigors; death.*—Charles W—, a porter, æt. 24, was admitted under my care on the 12th April, 1886.

He had had smallpox seven years before but no other serious illness. He had been deaf, but for how long was not clearly ascertained. His present ailment had begun five months previously with pain in the right ear and discharge

from it. For two or three days before admission he had also suffered from pain in the back of the neck and on the right side of the head, and on the 11th he had had an attack of shivering and vomited three or four times.

State on admission (2 p.m.).—A healthy-looking man; but he was complaining of pain on the right side of the head, and was suffering from a rigor, his temperature being 103° and his pulse 144.

At 7.30 in the evening his temperature was 105° his pulse 90, his respirations 27, and he was suffering from another rigor. He was complaining of severe pain in the right side of the head, with tenderness on percussion over the cervical spine, and pain on moving the head. He was very deaf with both ears, but most so with the right. On each side the membrana tympani was destroyed, the promontory was exposed, and there was a discharge. His tongue was covered with a fine white fur, he had anorexia, and his bowels were constipated. There was no paralytic condition of any part, no mental impairment, and all the abdominal and thoracic viscera were healthy.

He lived for a fortnight, during which time his symptoms varied somewhat, but his condition gradually deteriorated. His deafness became, if anything, more profound. His pain was inconstant, was often absent, and on the whole diminished. The pain in the ear and side of the head practically subsided a few days after admission, but the tenderness referred to the cervical spine, and the pain in moving his head, were complained of more or less during the greater part of his illness. On the 21st it was noted that he had great pain at the back of the neck, and especially behind and below the right ear, and also that there was some fulness and tenderness in that region. During the last few days of life he did not appear to suffer at all.

His temperature was of the pyæmic character, and varied between 107.2° and 96° . From the 12th to the 24th inclusive there was no day on which it did not reach 105° or more, and not unfrequently two such rises were noted in the course of twenty-four hours. On the 14th the temperature reached 107° in the evening; on the 15th 106.8° ; on the 17th 107.2° in the morning, and 106.8° in the evening; and on the 18th,

19th, and 23rd 106.4° . On the day before death it ranged only between 99° and 101.6° , and at the time of death it was 102° . The patient had frequent rigors and profuse sweatings. The rigors generally came on as the temperature was rising, and occasionally when it was at its height. On one occasion he had a rigor when the temperature was only 99.2° , but it was rising, and in the course of three hours reached 105° .

For the most part the pulse varied from about 108 to 144, and the respirations from 32 to 40. His urine, which was generally high-coloured and of pretty high specific gravity, never contained any albumen. On one or two occasions it was noticed to be alkaline, and to deposit a large quantity of mucin with stellate carbonate of lime crystals. His bowels were confined, his appetite bad, and his tongue coated. He was rarely sick.

The patient never presented a trace of paralysis, either local or general; and his eyes (examined by the ophthalmoscope and otherwise) appeared quite healthy. During the greater part of his stay in the hospital he was sensible, though irritable and drowsy, and inclined to ramble when his temperature was high. His hands were often markedly tremulous. During the last few days he appeared to be wholly unconscious during the continuance of high temperature; and he became more drowsy, though often waking with a sudden start, and restless movements of his hands and legs.

He lost flesh rapidly during his illness, and especially he became excessively feeble. On the 24th, some dulness on percussion, with tubular breathing, was noticed at the posterior part of the left side of the chest; and he was breathing at the rate of 86 in the minute. On the next day, the 25th, his temperature (as before stated) had fallen; his respirations (which averaged 80 in the minute) were of the Cheyne-Stokes character; he was only partially conscious, and evidently moribund. His pupils were contracted, his tongue dry and glazed. He continued to sink, and died early on the morning of the 26th.

Autopsy.—The dura mater was normal, excepting that it presented a greenish hue over the right lateral sinus. This canal was filled with thickish, dirty, salmon-coloured pus, and its walls were lined with inflammatory lymph. All the other

sinuses were healthy. There was superficial softening with discolouration of the portion of the brain in contact with the discoloured area of dura mater. But in every other respect the brain and its membranes were entirely healthy. The right ear was examined, and its cavity (together with the mastoid cells) was found full of cheesy matter, which enveloped the ossicles. The right internal jugular vein, as far down as the angle of the jaw, was full of the same kind of pus as that found in the lateral sinus. Below the angle the vein was empty.

No disease was observed in any other organ of the body. There were no infarcts. .

CASE 2. *Chronic ear disease ; thrombosis of lateral sinus ; septicæmia ; death.*—Thomas C—, an engineer, æt. 35, was admitted under my care on the 27th April, 1886.

He had been quite deaf of the left ear since he was about thirteen years of age, but he had had no pain until a year previously, since when he had had occasional discharges from it. On the 21st of April he caught cold, had an attack of earache and discharge, and three days later was compelled to take to his bed on account of his increasing illness. Since the 24th he has had much pain in and about the ear, with pain and swelling about the upper part of the sterno-mastoid muscle, sweating, vomiting, and attacks of shivering.

State on admission.—He was perfectly sensible, and with no trace of paralysis. He was quite deaf with the left ear, from which there was an abundant offensive purulent discharge, and the membrana tympani of which was destroyed. He had much pain on the left side of the head and neck. There was tenderness about the mastoid process, and much tenderness with some swelling corresponding to the upper half of the sterno-mastoid. No pain or tenderness was complained of in the cervical vertebræ. Eyes healthy in all respects. Skin hot and dry; temp. 105°; pulse 120; urine acid, sp. gr. 1015, free from sugar and albumen. Thoracic and abdominal viscera apparently all healthy.

The patient went on badly, and died on the 7th May. He suffered during the first week from pain in the head, not always localised; but latterly seemed pretty free from pain.

There was always tenderness and pain along the anterior edge of the sterno-mastoid, especially just below the ear, together with some vague swelling of the same region, and during the last day or two of life the tenderness extended in the course of the jugular down to the clavicle. The discharge from the ear diminished, and finally ceased.

The temperature reached its highest point ($105\cdot4^{\circ}$) on the day of admission, after which it varied between 98° and 104° .

From the 30th April to the 5th May it never rose above $102\cdot8^{\circ}$. The variations were very irregular. During the first six days rigors occurred once or twice a day; subsequently they disappeared. After the first day or two the patient began to ramble, and thenceforth rambling was pretty constant, although generally he could be roused to answer; also after this time he passed his evacuations unconsciously.

A day or two before death dulness and crepitation were observed over the lower part of the right lung.

His pulse varied in rapidity from 90 to 140, the respirations from the normal to 48; his urine, which was generally of high specific gravity, was always free from albumen.

No paralysis, anæsthesia, or convulsions ever appeared, and there was never any trace of squint, inequality or inaction of the pupils, or affection of the fundi.

He became gradually more and more drowsy and unconscious, and weaker, and died without further symptoms on the morning of the 7th, his temperature at the time of death being about one degree above the normal.

The post-mortem examination was made by my house physician (the late Dr. Hutton) after the body had been removed from the hospital. The head alone was opened. There were no signs of disease either of the brain or of its meninges. The left lateral sinus contained a decomposing clot, which blocked up the sinus almost as far back as the torcular herophili. There was extensive caries of the petrous bone.

CASE 3. *Chronic ear disease; phlebitis of lateral sinus; slight meningitis; pyæmia; death.*—William L—, æt. 21, came under my care on the 30th April, 1887. He had suffered for many years from affection of the left ear; and a fortnight

previous to admission had been attacked with headache, pain at the back of the neck, and discharge from the left ear, which had continued.

On admission.—He was a strongly-built man complaining of great pain in the head, and a general feeling of illness. He was sensible but not acute, answering questions slowly and hesitatingly. His pain was mainly occipital and very severe. There was no definite earache, and no swelling or tenderness in the neighbourhood of the ear, or in the course of the internal jugular vein. There was a little very offensive discharge from the left ear, and the membrana tympani was perforated. There was no affection whatever of the eyes, and no paralysis of any part of the body. The tongue was coated, the pulse 120; the urine acid, sp. gr. 1028, and free from albumen. The thoracic and abdominal organs appeared all to be healthy. The temperature on the day of admission was never below 103° . At 2 p.m. it was 104.2° ; at 8 p.m. 104.6° ; at 11.10 p.m. 106° , and he had a rigor; and at 11.40, 107.4° . At this time he was delirious but not violent.

On May 1st he was in much the same state. He still suffered from very acute occipital headache, and (though generally sensible) was inclined to ramble, especially when his pyrexia was very high. His temperature did not sink below 102.4° . At 4 a.m. it was 104° , at 6.30 p.m. 105.4° , and he had a rigor; at 10.20 106° , and he had a second rigor; and at 11 it reached 107° .

On the 2nd, he was still complaining of intense pain at the occiput, of pain at the back of the neck, aggravated by movement, and of much pain and tenderness at the angle of the left jaw. But there was no discolouration or swelling, and very little discharge from the ear. He stated that he saw double, and there was obvious weakness of the left external rectus; but the eyes were healthy in other respects. Tongue coated; took food fairly well; not sick; very restless, and inclined to ramble and mutter. The lowest temperature today was 101.4° , but at 5 a.m. it was 105.8° , and he had a rigor.

During the next few days his temperature ranged from 101° to 104.6° , and he had no more attacks of shivering. He continued to complain of severe pain and some tenderness in

the occipital region, back of the neck, and at the angle of the jaw, and occasionally of slight earache. He also complained at times of pains shooting down the back, and in the arms and legs. He rambled, yet could generally be roused to answer sensibly, and his hands and arms were tremulous. The pulse varied from 120 to 156; the respirations rose to 60, and the urine showed a trace of albumen. His squint continued. On the 4th he complained of pain on the left side of the chest, and loud friction-sounds were detected there.

On the 7th, it was noted, that the patient was quieter than he had been; that he rambled, but answered when spoken to; that his hands were in constant movement, as though he were trying to do something with them, and tremulous; that he still suffered from pain in head and neck and chest; that there were evidences of pleurisy on both sides; that his pulse was 150, and his respirations 60 and irregular. He also had slight tenderness in the legs. He gradually sank during the day, and died at 5 a.m. on the morning of the 8th. His temperature at the time of death was $104\cdot4^{\circ}$, and twenty minutes later it was still $104\cdot4^{\circ}$ in the axilla, and $106\cdot8^{\circ}$ in the rectum. The patient never had any other paralysis than that of the left external rectus during his illness, or any convulsions.

Autopsy.—On removing the brain, the dura mater over the roof of the left tympanum was slate-coloured, and partially detached in an area about the size of a sixpence. The bone beneath was very soft, and in one spot (about 2 lines in diameter) perforated, the hole being plugged with cheesy matter. The internal ear was full of similar material, and disorganised. The ossicles were absent. The membrana tympani was soft, pulpy, and of a dull red colour. The external meatus was empty.

The left lateral sinus presented some soft, dark-coloured, recent coagulum, and a little pale fibrinous clot adherent to the wall. It did not contain pus, and was not plugged. The jugular vein was healthy.

On the under surface of the left temporo-sphenoidal lobe, near the tip, was a small slate-coloured patch. There was no softening, but the discolouration extended to some little depth into the brain-substance. There was also a small patch of

meningitis, with effusion of lymph limited to the neighbourhood of the chiasma, and involving the third and sixth nerves on the left side. The corpus dentatum in the left lobe of the cerebellum was indistinct, and obviously softened. In other respects the brain was healthy.

A few enlarged lymphatic glands were discovered around the left internal jugular vein, close to the skull.

Both lungs presented numerous pyæmic infarcts, and the pleuræ over these were covered with laminæ of recent lymph. About half a pint of turbid fluid was found in each cavity.

The other thoracic and abdominal organs were softened, but in other respects healthy. None of them contained infarcts.

CASE 4. *Old hip disease; caries of ear followed by meningitis, abscess of brain, delirium, hemiplegia, &c.*—Frederick O—, a schoolboy, æt. 16, was admitted under my care October 6th, 1886. When three or four years old he was run over and injured in the left hip, which suppurated and discharged on and off up to two years ago. Since that time he has had a discharge from his right ear. He fell down some stone steps six weeks ago, struck his head, and thenceforth seems to have had more definite symptoms of ear disease, and general illness. On the 2nd, he is said to have become delirious.

On admission, he was constantly moaning, talking to himself, picking at the bed-clothes and imaginary things in the air, and could not be got to answer questions coherently. His head was kept rigid, and the attempt to move it caused pain. There was an offensive discharge from the right ear, but no swelling or tenderness in the neighbourhood. He did not squint, the pupils were dilated (the left being slightly larger than the right) and contracted to light, the discs were normal. There was no facial or other paralysis. The left leg was three inches shorter than the other, and there were numerous scars about the hip-joint. His tongue was coated, his bowels confined, his temperature 100° , and his pulse 78. There was no evidence of thoracic or abdominal disease.

His delirium soon passed into unconsciousness, his pupils became contracted, and both these and the conjunctivæ

insensitive, and his urine was passed unconsciously. His head remained rigid and somewhat retracted, and on the evening of the 7th it was noticed that, while he was constantly moving the right arm and leg, the left limbs were kept perfectly still, but there was no squint and no paralysis about the face. His temperature varied usually from 100° to 101.6° , but on the morning of the 7th he had a rigor, and it rose to 103.2° , and just before death it reached 104.8° . The pulse varied from 78 on admission to 120, and the respirations rose to 36. He died comatose early on the 8th.

Post-mortem examination.—There was general meningitis, with effusion of lymph and pus in the meshes of the pia mater, and an abscess (about the size of a Tangerine orange, and containing thick, curdled, dirty-looking, offensive pus) was found in the right temporo-sphenoidal lobe. The dura mater covering the roof of the right tympanic cavity was softened, greenish-coloured and perforated, and the bone corresponding to it was carious. Apart from the affection of the ear and hip (which parts were not particularly examined) the only other indication of disease was the presence of a few miliary tubercles at the apex of the right lung.

THREE CASES
OF
SUPPURATING DERMOID CYST, OF OR
NEAR THE OVARY,
TREATED BY ABDOMINAL SECTION.

By CHARLES J. CULLINGWORTH, M.D., F.R.C.P.

By one of those accidents of practice that are by no means uncommon, and that we can yet never help regarding as curious, it has happened to me to have three cases of suppurating dermoid cyst under my care within the comparatively short period of six months. These cysts are always of considerable interest, both clinical and pathological. I propose to restrict myself in this paper to the clinical aspect of the cases.

CASE 1.—Annie H—, æt. 39, married, residing in Lambeth, was admitted into Adelaide Ward May 1st, 1888.

She has had twelve children and three miscarriages. She was an exceptionally healthy woman until the last miscarriage, which took place three months ago in the fourth month of pregnancy, since which time she has done no work and has been much in bed. She has had no pain and no vaginal discharge, but has suffered from vomiting, diarrhœa, and progressively increasing weakness, and has lost flesh.

The patient looks pale and ill. The abdomen is swollen,

more particularly on the left side, but its walls remain flaccid. There is a freely movable tumour, firm and elastic. Everywhere the percussion-note is resonant. The upper limit of the tumour is immediately above the umbilicus. No fluctuation can be detected in it. The measurements are:

Girth at umbilicus	...	...	...	...	= 41 in.
Umbilicus to pubes	...	...	...	...	= 8 "
"	ens. cart.	...	...	...	= 7 "
"	ant. sup. sp. right ilium	...	...	...	= 9½ "
"	ant. sup. sp. left ilium	...	...	...	= 9½ "

On vaginal examination the os uteri is found to be very high up, the sound passing to the right. The uterus is movable within certain limits independently of the tumour. The length of the cavity is 3½ inches.

The patient's morning and evening temperature up to the day of operation was as follows:

May 1, p.m.	100·6°	May 6, a.m.	99·2°
2, p.m.	101·0	p.m.	100·2
3, a.m.	99·4	7, a.m.	99·2
p.m.	101·6	p.m.	101·2
4, a.m.	99·0	8, a.m.	99·6
p.m.	101·6	p.m.	100·4
5, a.m.	99·8	9, a.m.	99·4
p.m.	101·4	p.m.	98·8

May 10th.—Ether having been administered, an incision 3¾ inches long was made in the median line below the umbilicus. The tumour was found to have developed from the left ovary. There were no adhesions anteriorly, and there was no bowel intervening between it and the anterior abdominal wall. The exposed tumour was found to be resonant on percussion. On inserting a trocar exit was given to a large quantity of purulent fluid. The tumour was seized with a large pair of pressure forceps and drawn out of the abdomen. The pedicle was tied and divided. Several very firm and vascular adhesions existed between the tumour and the omentum, mesentery, and intestine; these were carefully separated, bleeding being arrested partly by fine silk ligatures and partly by suturing together raw peritoneal surfaces. One piece of the thickened omentum was ligatured and cut off.

The right ovary was now brought into view. It was found to be enlarged to the size of a hen's egg, and cystic. It was free from adhesions and easily removed.

There being no glass drainage-tube long enough to reach to the bottom of Douglas's pouch, an india-rubber drainage-tube, 5½ inches long, was inserted at the lower angle of the wound, after cleansing the peritoneal cavity. The abdominal wound was closed with silkworm-gut sutures, powdered with iodoform, and covered with a wood-wool pad and a many-tailed flannel bandage.

The operation lasted an hour and a quarter.

The larger tumour was found to contain, besides pus, hair, teeth, and nipples. The smaller one was not suppurating; otherwise its contents were similar to those of the larger one, only that they were embedded in a mass of yellowish, greasy material. The tumours were exhibited as a card specimen, at the Pathological Society, by Mr. Shattock ('Trans.,' vol. xxxix, p. 442.

The patient recovered very favorably. The tube was removed on the morning of the 12th. On the 14th the bowels acted freely after an enema, and urine was, for the first time, passed voluntarily. All the stitches were removed on the 15th, except that at the site of the drainage-tube. On the 18th there was noticed some puffiness of face, and the urine was found to contain a considerable quantity of albumen.

Discharged June 2nd, quite well, except that there was a trace of albumen in the urine.

The following is a record of the temperature from the day of operation :

May 10.—4 p.m.	98·8°	Noon.....	100·4
8 p.m.	101·6	4 p.m.	100·6
Midnight	100·6	8 p.m.	100·4
11.—4 a.m.	100·2	Midnight	100·8
8 a.m.	100·2	13.—4 a.m.	100·8
Noon.....	99·8	8 a.m.	101·2
4 p.m. ..	100·2	Noon.....	101·4
8 p.m.	100·0	4 p.m.	101·6
Midnight	99·6	8 p.m.	101·4
12.—4 a.m.	100·0	Midnight	100·6
8 a.m.	99·6	14.—4 a.m.	100·8

May 14.—8 a.m.	100·4°	May 16, a.m.....	98·8°
Noon.....	100·4	p.m.....	98·6
4 p.m.	99·6	17, a.m.....	98·6
8 p.m.	99·8	p.m.....	98·6
Midnight	99·2	18, a.m.....	98·6
15.—4 a.m.	98·8	p.m.....	99·8
8 a.m.	98·6	19, a.m.....	99·6
Noon.....	98·8	p.m.....	99·4
4 p.m.	99·2	20, a.m.....	98·6
8 p.m.	98·8	p.m.....	98·0
Midnight	99·0		

Remarks.—There are one or two points of interest in this case. The chief of these is the fact that the patient had had fifteen pregnancies in spite of the condition of the ovaries, and that her last pregnancy had terminated in a miscarriage at the fourth month, only three months before her admission. After such an experience one would find it difficult to define the precise amount of ovarian disease that is necessary to render a patient sterile, and, from this point of view, the case has an important bearing on the question as to how far it is justifiable to remove ovaries for trifling lesions during the child-bearing period of a woman's life. It is easy to say that the ovaries in any given case are so diseased that conception is impossible, but such statements are shown, by accumulating experience, to be very difficult of proof. It is becoming more and more evident that ovaries should not be lightly condemned to extirpation, inasmuch as we have no criterion by which to pronounce them incapable of performing their function.

Another noteworthy feature in the case is the tympanitic note elicited on percussion over the main tumour. That this was due, not to the presence of intervening intestine, but to the accumulation of gas in the cyst itself, was proved by percussing the tumour when it was exposed at the operation. Dr. Malins, of Birmingham, has recently called attention to three or four instances of a similar kind in a paper read before the Birmingham and Midland Counties Branch of the British Medical Association, and published in the 'Lancet,' September 15th, 1888, p. 514,¹ and the third case in the present series affords another example of the same phenomenon.

¹ 'On the Presence of Air in Suppurative Swellings of the Abdomen.' By Edw. Malins, M.D., M.R.C.P.

It only occurs when the contents of a cyst are undergoing suppuration, of which there are almost invariably well-marked constitutional indications. Although, therefore, the possibility of its occurrence under these circumstances must be borne in mind, this does not detract from the value of percussion as a means of diagnosis in abdominal swellings generally.

The patient was very ill at the time the operation was undertaken, evidently from the absorption of septic material which was continually going on from the suppurating cyst. Hence the adoption of antiseptic measures had not the usual result of ensuring freedom from marked pyrexia during convalescence. As no fresh absorption, however, could now take place, the septicæmic condition did not long continue, and after the fifth day the temperature was practically normal.

On the ninth day, a somewhat unusual complication appeared. The face and hands were noticed to be puffy, and on examining the urine it was found to contain a large quantity (one third) of albumen. The urine had been examined before the operation, according to the invariable routine, and was then free from albumen, so that the kidney affection had somehow or another become developed during the convalescence. It was, however, of very temporary duration. In two days the quantity of albumen had become considerably diminished, and in a fortnight there was scarcely more than a trace to be discovered. The patient did not experience any constitutional ill effects during the attack of nephritis, and when last I heard of her she was perfectly well.

CASE 2.—Emily D—, æt. 36, married, residing at Brixton Hill, was admitted into Adelaide August 23rd, 1888.

She had been confined of her fourth child nineteen weeks previously. Her first three labours had been natural. Six months after the birth of the third child she was laid up for thirteen weeks with an attack of peritonitis; after this she was quite well, there being no vaginal discharge and, so far as was known, no abdominal swelling. Her last delivery was instrumental, and even then was accomplished with difficulty. She became feverish soon afterwards and had much vomiting. The catheter was required for a week. The lochia were

arrested. A fortnight after the labour a purulent discharge took place from the vagina; this went on for a few days, when the flow not being very free the opening in the vagina was enlarged by the medical attendant. The purulent discharge continued for thirteen weeks, gradually diminishing in quantity; it then suddenly became more profuse and very offensive and a further opening was made. Not long after this a quantity of horribly offensive, pultaceous material passed, together with a quantity of hair, three or four inches in length. This offensive discharge has been going on up to the time of admission. The patient has endeavoured to occupy herself in the house, but found that she was becoming thinner and weaker, and was never safe from a sudden outburst of ill-smelling discharge. An abdominal swelling had been noticed for the first time by the medical attendant about six weeks after the confinement.

On admission, she was pale, wasted, and very ill. She complained of pain in her back and in the lower parts of the abdomen, of an abdominal swelling, and of a foetid discharge from the vagina.

A rounded tumour was found in the right iliac region, extending a little to the left of the middle line and upwards as far as the level of the umbilicus. The tumour measures five inches by five inches, and is movable from side to side and also slightly upwards and downwards. Fluctuation doubtful. The percussion-note is dull over the centre of the tumour and comparatively resonant at its margins.

The vagina is shortened; the posterior wall measures only two inches from the vaginal orifice, the anterior measures still less. The posterior fornix is obliterated, the finger passing directly into the os uteri. Above the vagina posteriorly is a hard rounded mass. Just inside the os uteri, on the posterior wall of the cervix, can be felt an irregular depression, such as would be caused by inserting a trocar. In the absence of any discoverable opening in the vaginal walls, this depression may be taken to be the spot where the abscess burst and where it still discharges. Uterus movable, pushed slightly to the left, and normal in the length of its cavity.

On August 30th an incision four and a half inches long was

made in the middle line of the abdomen. The omentum protruded. On pushing this to one side a round, pearly-white, movable tumour was seen, extensively adherent to the omentum and surrounding parts. After separating adhesions the pedicle was secured, and the tumour removed entire. It proved to be a dermoid cyst of the right ovary, five inches in diameter, containing a brownish-yellow mass of the consistence of paint, mixed with a quantity of hair. The pelvis was now explored and a second tumour discovered, springing from the same side and occupying Douglas's pouch. It was adherent throughout, the adhesions being specially firm in front near the cervix uteri. It was carefully and with much difficulty detached all round, a quantity of highly offensive pus flowing from the vagina during the manipulation. Before separating the adhesions in the immediate neighbourhood of the opening the pedicle was secured and divided. It was necessary to tie it close to the right cornu of the uterus. The remaining adhesions were then separated: a gush of highly offensive gas escaped with a distinct "whiz," and the tumour, partially collapsed, was lifted quickly out of the body. It was a little smaller than the other one, and its contents, thick sebaceous material mixed with hair, were in a state of suppuration and of an extremely offensive odour. A portion of the omentum, where adhesions had been separated and where there were many bleeding points, was ligatured in two places and removed. The peritoneal cavity was repeatedly washed out with hot solution of boracic acid, and a glass drainage-tube passed through the lower angle of the abdominal wound. The wound above the tube was closed with sutures of silkworm gut. After the patient had been removed to the ward and had rallied a little from the operation, the vagina was thoroughly douched with hot boracic lotion.

Some sickness followed the operation; none after 2 a.m. on September 2nd. No distension occurred. The wound was dressed, and the drainage-tube emptied by pipette night and morning until the morning of September 1st, when the discharge was so slight in quantity, and so entirely free from admixture with blood, that the drainage-tube was removed, and the lower angle of the wound closed by a suture that had been passed at the time of the operation and left untied.

On September 9th, the temperature remaining high, a vaginal examination was made. The uterus was found fixed, and the region of Douglas's pouch was full, hard, and tender to the touch. Much mucus is discharged *per anum*. On the following day a quantity of pus escaped from the lower angle of the wound. The stitches were removed on the 11th, and an india-rubber drainage-tube was passed into the wound where the opening had occurred. Later in the day a large quantity of ill-smelling pus escaped by the side of the tube, soiling all the dressings, and pouring out beyond them. The discharge became daily less offensive and smaller in quantity, but on the 19th an escape of pus took place from one of the suture tracks in the abdominal wound. A free opening was made, and the discharge soon ceased. On the 21st the patient was able to sit up in bed, and on October 13th she was discharged well. She presented herself five weeks later looking stout and well.

The following is the temperature record :

1888.	Temp.	Pulse.	1888.	Temp.	Pulse.
Aug. 23, p.m.....	99.2°		Sept. 1, 4 p.m....	98.8°	126
24, a.m.....	99.0		8 p.m. ...	98.8	118
p.m.....	100.6		midnight	98.8	120
25, a.m.....	98.8		2, 4 a.m. ...	98.2	120
p.m.....	98.8		8 a.m. ...	97.0	114
26, a.m.....	98.0		noon ...	98.8	112
p.m.....	99.8		4 p.m. ...	98.6	104
27, a.m.....	98.0		8 p.m. ...	99.0	96
p.m.....	98.6		midnight	98.0	104
28, a.m.....	98.4		3, 4 a.m. ...	98.4	102
p.m.....	98.4		8 a.m. ...	99.0	100
29, a.m.....	98.6		noon ...	99.2	102
p.m.....	98.0		4 p.m. ...	99.0	110
30, a.m.....	98.0		8 p.m. ...	99.0	120
8 p.m. ...	98.4	116	midnight	98.0	104
midnight	97.4	118	4, 4 a.m. ...	98.2	102
31, 4 a.m. ...	96.4	116	8 a.m. ...	98.4	106
8 a.m. ...	97.6	120	noon ...	99.8	120
noon ...	98.2	128	4 p.m. ...	100.2	124
4 p.m. ...	99.2	132	8 p.m. ...	101.6	128
8 p.m. ...	99.6	134	midnight	99.2	118
midnight	99.0	132	Sept. 5, 4 a.m. ...	98.2	
Sept. 1, 4 a.m. ...	99.6	120	8 a.m. ...	97.2	
8 a.m. ...	99.2	128	noon ...	98.6	
noon ...	98.4	122	8 p.m. ...	100.4	

1888.	Temp.	1888.	Temp.
Sept. 5, midnight	100·0°	Sept. 10, 7 p.m.....	101·4°
6, 4 a.m.....	99·6	midnight	101·2
9 a.m.....	99·4	11, 4 a.m.....	99·6
noon	99·4	9 a.m.....	99·0
8 p.m.	100·2	4.30 p.m.	101·2
midnight	99·4	8 p.m.....	102·0
7, 4 a.m.....	100·0	midnight	100·8
9 a.m.....	99·4	12, 4 a.m.....	99·6
7 p.m.....	100·0	9 a.m.....	99·4
midnight	101·0	7 p.m.....	100·0
8, 5 a.m.....	99·6	midnight	99·4
9 a.m.....	99·8	13, 4 a.m.....	97·4
4 p.m.....	101·6	9 a.m.....	99·0
8 p.m.....	102·0	4 p.m.....	100·4
8.30 p.m.	101·0	8 p.m.....	99·4
9, 4 a.m.....	99·2	14, a.m.	98·0
9 a.m.....	98·4	p.m.	99·0
p.m.	102·0	15, a.m.	98·0
Sept. 10, 4 a.m.....	99·2	p.m.	98·0
9 a.m.....	99·0	16, a.m.	98·2

Remarks.—In this case the tumour situated in Douglas's pouch caused a serious obstruction to labour, necessitating the employment of considerable force in the use of the forceps. That suppuration of the cyst-contents was due to injuries received during parturition seems probable from the following considerations, viz.: (1) The patient had no symptoms of illness before labour; (2) such symptoms presented themselves very shortly after labour, and were followed, in a fortnight, by a purulent discharge from the vagina. Careful vaginal examination, repeated on several occasions while the patient was in the hospital, did not result in the discovery of any opening, large or small, in the walls of the vagina itself. There was, however, a distinct scar just within the cervix uteri on its posterior aspect, where a slight irregular laceration had taken place and had partially healed. The legitimate inference is that a laceration of the posterior wall of the cervix, not involving the os externum, and extending into the subjacent connective tissue, occurred during parturition, and that the cyst in Douglas's pouch, having become inflamed in consequence of the severe pressure to which it had been subjected during the passage of the child, suppurated and eventually gave way in the direction of least resistance, viz. through the

lacerated cervix. The communication thus established between the cyst and the exterior of the body speedily resulted in putrefactive change within the cyst, so that the discharge, which was at first without odour, soon became horribly offensive. The opening must have had more or less of a valvular character throughout, inasmuch as the discharge took place in gushes. This circumstance told greatly in the patient's favour at the time of operation, for, although a profuse purulent discharge issued from the vagina during the separation of the cyst from its adhesions, none of the fluid with which the peritoneal cavity was irrigated at the close of the operation found its way through the opening, and no fluid passed at any subsequent period during the convalescence.

It will be noticed that after the operation suppuration took place in the abdominal wall, near the lower angle of the incision and in the track of one of the sutures. This is a very rare occurrence now a days, and, so far as my experience goes, only takes place in patients who are the subjects of septi-cæmia at the time of operation, and not always even in them.

If it be asked why, instead of performing abdominal section, I did not content myself with enlarging the aperture and emptying and draining the suppurating cyst through the vagina, I reply that this would have been, for several reasons, an unsatisfactory proceeding. For example, the contents of the cyst were known to be thick and to be mixed with hair, so that a very large opening would have been necessary, and even then the emptying of the cyst would have entailed a long period of suppuration and drainage. Further, supposing this to have been accomplished, the abdominal tumour would have still remained. On these and other grounds, which will at once suggest themselves to the surgical mind, it was thought desirable to open the peritoneal cavity and endeavour to remove the tumours completely.

CASE 3.—Mrs. Marian M—, æt. 35, the wife of a Wesleyan minister, admitted to St. Thomas's Home under my care August 30th, 1888, has had four children and five miscarriages. First menstruated at eleven, and ceased entirely twelve months ago.

Had severe hæmorrhages at the time of her miscarriages.

Her last labour (at term) took place twelve years ago, and was a very difficult one. Instruments were employed, and she was under the influence of chloroform for seven hours. After this she had a very severe illness, lasting a month, attended with inflammation of the bowels. The abdomen has been large from that time, but nothing was known of the existence of a tumour until the doctor found it out a few weeks ago, during present illness.

Her present illness began on July 19th, 1888. She had been feeling unusually weary for more than a week when she awoke one night with excruciating pain, felt first in the vagina. She had difficulty in micturition, which, with the pain, made the doctor suspect stone in the bladder. Two or three days later she had an attack of shivering. The severe pain lasted about ten days, but there has been more or less pain ever since, and she has been confined entirely to bed with feverish symptoms—thirst, loss of appetite, and headache. Vomiting occurred, not of food, but of mucus two or three times a day. She has also had shortness of breath, and constipation, which, a week ago, gave place to diarrhoea. Has also had pain down the right leg. She is a dark-complexioned woman, wearing a look not of emaciation but of considerable prostration. She lies flat on her back, generally with the knees drawn up, and seems disinclined to move. She is very drowsy, but is not delirious.

The abdomen is considerably and uniformly distended; everywhere resonant on percussion, and tender to the touch. A large tumour can be felt between umbilicus and pubes, but the tympany is too great to permit the distinct mapping out of its outlines. The measurements are as follows :

Girth at umbilicus	...	...	...	...	...	38 in.
Distance from umbilicus to pubes			...	...	...	7½ "
"	"	ens. cart.	...	...	...	6½ "
"	"	ant. s. sp. r. ilium		...	...	9 "
"	"	" l. ilium		...	...	9½ "

The uterus is normal in length and direction. The urine is free from albumen. The record of temperature, &c., during the first two or three days after admission was as follows :

Suppurating Dermoid Cyst

	Temp.	Pulse.	Resp.
Aug. 30.—4 p.m.	101·6°		
8 p.m.	101·4		
31.—8 a.m.	98·8		
2 p.m.	102·6		
8 p.m.	102·2	... 140	... 40
Sept. 1.—8 a.m.	101·0	... 112	... 32
Noon	102·2	... 120	... 40
4 p.m.	101·8	... 120	... 32
8 p.m.	101·6	... 92	... 32
Midnight	101·8	... 94	... 34
2.—4 a.m.	101·0	... 92	... 36
8 a.m.	100·2	... 80	... 36
Noon	100·2	... 100	... 32
4 p.m.	101·6	... 112	... 32
8 p.m.	100·0	... 104	... 32
Midnight	100·4	... 106	... 36

The evacuations from the bowel were horribly offensive and very copious.

On Sept. 3rd, at 2 p.m., ether having been administered, an incision was made in the median line of the abdomen. Having divided a layer of fat, an inch in thickness, and some subjacent structures, a very dense, tough layer of tissue was reached, which, being situated beneath the sub-peritoneal fat, was thought at the time to be the peritoneum enormously thickened. Suddenly there was an outrush of foetid gas. The first impression was that the intestine had been wounded, but the finger having been passed into the opening, it was found that a cavity had been entered, containing a quantity of foul débris, and a loose mass of hair. The opening was now enlarged, and the lining of the cavity was then seen to consist of thick coarse skin, from which here and there hairs were growing. The cyst was closely adherent to the abdominal wall, and the incision was made directly into it, the peritoneal cavity not being opened at all during the operation. The cyst wall was ulcerated in several places, and at the extreme right was a ragged perforation, an inch in length, leading to a smaller cavity containing blood, partly liquid and partly clotted. No communication with the intestine or with the peritoneal cavity was discovered, although subsequent events showed that a communication with the bowel existed. After washing out the cavity with hot solution of boracic

acid, an exceedingly curious discovery was made. Projecting into the cyst at its lowest part was the healthy right ovary, and to the outer side of this was the middle portion of the Fallopian tube, also normal in appearance, with a portion of the subjacent fold of the broad ligament. No opening could be found by the side of these structures. The ovary was simply lying on the floor of the cavity, like a sessile growth from its wall, and the adjacent loop of Fallopian tube had the appearance of having been accidentally included within the cyst during its development. Both were left as they were. It was useless to think of separating and removing the cyst, and it was therefore decided to be content with emptying and draining it. Two india-rubber drainage-tubes were accordingly inserted, one at the upper and the other at the lower angle of the incision, and the incision between them was closed with sutures of silkworm gut. A wood-wool pad and many-tailed flannel bandage were applied, and the patient placed in bed.

For the first few hours the discharge consisted of blood-stained fluid without odour, but at 6 a.m. on the following day it became unmistakably fæcal. The patient's general condition had meantime improved. No discharge having passed from the upper tube, it was removed on the third day, and the upper angle of the incision was closed.

On the 6th, 7th, and 8th of September the passage of semi-liquid fæces from the remaining tube was constant and abundant. On the 9th the discharge was much slighter and less offensive. At 3 p.m., and again at 7 p.m., a soap-and-water enema was administered, resulting in the passing, *per anum*, of a formed motion. On changing the pads over the abdominal wound they were found to be slightly stained by the enema. On the 10th an enema was again administered, but without result. The discharge from the drainage-tube was purulent and scarcely at all offensive.

A consultation with the Resident Medical Superintendent of the Home was held in the afternoon to determine as to the advisability of reopening the wound, and attempting to close the intestinal fistula. It was decided that as the symptoms had become more favorable, it would be better not to interfere. The stitches were all removed, and a larger drainage-

tube introduced. Next day, the 11th, there was a profuse foetid discharge, but without faecal odour. The lower angle of the wound opens into a cavity $1\frac{1}{2}$ inches deep by $1\frac{1}{2}$ inches long, and $\frac{3}{4}$ inch wide, lined with granulations and filled with foetid pus. This cavity communicates, by a sinus running upwards beneath the abdominal incision, with the opening at the upper angle, where the second drainage-tube had lodged. At the bottom (posterior part) of the cavity pus was seen welling up from an opening into which a drainage-tube could be passed for some distance directly backwards.

On September 12th the patient's general condition was, for the first time since the operation, alarming. She looked prostrate. A patch of redness appeared on the right cheek, and a bedsore, which had been present for several days, looked glazed and indolent. She was ordered to have champagne. An enema resulted in the passing of a lumpy but otherwise natural stool. The discharge was very free, but had no faecal odour. A solution of potassium permanganate was injected into the bowel; none came out at the wound.

Next day the patient had improved, and from this time her progress towards recovery was continuous. She was allowed to sit up on the 20th, and on October 13th she went home. The bedsore had almost healed. The abdominal wound was gradually closing, and had a healthy appearance. A drainage tube was still worn, passing to a depth of about $2\frac{1}{2}$ inches.

Her medical attendant has written several times since she left to report progress. In a letter dated November 21st, 1888, he says: "Mrs. M— continues to do well. Her strength is slowly returning; appetite good; sleeps well. She is free from pain and discomfort. Her temperature remains at all times normal, and the pulse is seldom over 100. . . . The sinus from which I removed the tube (on the 7th November) remains open and discharges a little offensive pus, not so much or so offensive as it was two or three weeks ago. I can still pass a probe to a depth of about $3\frac{1}{2}$ inches."

On January 8th, 1889, he tells me that Mrs. M— is gaining strength, and worked for some time the previous day at a sewing-machine. She still has some discharge from the

wound, and finds herself better when she is wearing a small drainage-tube.

The record of temperature, &c., for the fortnight following the operation is subjoined.

1888.	Temp.	Pulse.	Resp.
Sept. 3.—4 a.m.	100·8°	...	108 ... 34
8 a.m.	100·2	...	116 ... 36
Noon.....	102·4	...	118 ... 40
Operation 2 p.m.			
4 p.m.	100·4	...	120 ... 40
8 p.m.	101·4	...	128 ... 44
Midnight	100·0	...	110 ... 40
4.—4 a.m.	99·6	...	110 ... 40
8 a.m.	99·8	...	112 ... 40
Noon.....	99·8	...	112 ... 40
4 p.m.	99·4	...	108 ... 40
8 p.m.	100·4	...	120 ... 44
Midnight	100·6	...	120 ... 44
5.—4 a.m.	99·2	...	118 ... 40
8 a.m.	99·0	...	104 ... 40
Noon.....	98·4	...	104 ... 40
4 p.m.	100·2	...	108 ... 44
8 p.m.	99·8	...	120 ... 44
Midnight	100·6	...	104 ... 36
6.—4 a.m.	98·8	...	102 ... 36
8 a.m.	99·8	...	104 ... 40
Noon.....	99·4	...	104 ... 36
4 p.m.	99·6	...	108 ... 40
8 p.m.	100·8	...	104 ... 40
Midnight	101·4	...	112 ... 42
7.—4 a.m.	99·4	...	100 ... 44
8 a.m.	99·0	...	112 ... 44
Noon.....	100·4	...	112 ... 44
4 p.m.	99·0	...	112 ... 48
8 p.m.	100·4	...	120 ... 44
Midnight	98·4	...	104 ... 44
8.—4 a.m.	99·6	...	100 ... 32
8 a.m.	99·4	...	102 ... 36
Noon.....	99·4	...	104 ... 36
4 p.m.	101·0	...	112 ... 36
8 p.m.	100·2	...	104 ... 40
Midnight	100·4	...	100 ... 32
9.—4 a.m.	99·2	...	102 ... 32
8 a.m.	98·4	...	100 ... 36
Noon.....	99·8	...	112 ... 36
4 p.m.	99·0	...	100 ... 36

Suppurating Dermoid Cyst

1888.	Temp.	Pulse.	Resp.
Sept. 9.—8 p.m.	100·0°	...	112 ... 36
Midnight	100·4	...	104 .. 34
10.—4 a.m.	99·2	...	104 ... 36
8 a.m.	97·6	...	100 ... 32
Noon	99·4	...	104 ... 32
4 p.m.	99·0	...	120 ... 32
8 p.m.	99·0	...	104 ... 32
Midnight	99·4	...	106 ... 32
11.—4 a.m.	99·4	...	98 ... 28
8 a.m.	97·4	...	100 ... 32
Noon	99·6	...	104 ... 36
4 p.m.	100·4	...	94 ... 36
8 p.m.	98·6	...	104 ... 36
Midnight	99·4	...	100 ... 30
12.—4 a.m.	99·2	...	105 ... 30
8 a.m.	98·8	...	104 ... 36
Noon	99·8	...	112 ... 36
4 p.m.	99·4	...	104 ... 36
8 p.m.	100·4	...	104 ... 32
Midnight	98·8	...	108 ... 38
13.—4 a.m.	97·8	...	100 ... 34
8 a.m.	98·4	...	110 ... 36
Noon	97·4	...	94 ... 36
4 p.m.	99·4	...	96 ... 36
8 p.m.	101·2	...	112 ... 36
Midnight	100·2	...	100 ... 28
14.—8 a.m.	97·4	...	96 ... 24
8 p.m.	98·6	...	104 ... 32
15.—8 a.m.	98·6	...	96 ... 32
8 p.m.	98·4	...	96 ... 24
16.—8 a.m.	98·4	...	100 ... 28
8 p.m.	100·4	...	104 ... 36
17.—8 a.m.	98·2	...	100 ... 32

Remarks.—The diagnosis in this case was obscured, as in Case 1, by the presence of gas in the cyst, giving rise to a tympanitic note on percussion. In fact, so symmetrical was the distension of the abdomen, and so universal the resonance that if I had not had the assurance of my friend Dr. Maguire, who had seen the patient in consultation before the swelling had become so tense, and had satisfied himself of the existence of a tumour, I should have had serious doubts whether there was one or not. The operation was undertaken as being the only means of clearing up the case, and the only chance of saving the patient's life. I did not feel able to make an

accurate diagnosis, but the probabilities pointed in the direction of rupture of a suppurating cyst. The extremely offensive character and unnatural appearance of the stools suggested a communication with the intestine. Though such a communication was not discovered during the operation, subsequent events showed that one existed. Fortunately it closed spontaneously a week after the operation.

The most remarkable circumstance attending the operation was the discovery of the right ovary and a portion of the right Fallopian tube within the cavity of the cyst. I have no theory to offer in explanation of this. But the fact is incontestable, as Dr. Edmunds, who kindly assisted me at the operation, will testify.

The result of the operation has so far been much more satisfactory than could have been reasonably anticipated. Except for the inconvenience of the suppuration that still goes on from the interior of the collapsed cyst, the patient is now in a comfortable condition and is improving every week. Whether the sinus in the abdominal wall will ever entirely close it is impossible to say.

All three cases had this feature in common, viz. that the patient was unaware of the existence of a tumour, until symptoms of septicæmia called attention to the fact.

NOTES
OF SOME
OUT-PATIENT CASES IN THE EYE
DEPARTMENT.

BY J. B. LAWFORD, F.R.C.S.
ASSISTANT OPHTHALMIC SURGEON.

THE brief notes of the cases here narrated are in many respects incomplete ; my only excuse for this is the difficulty of obtaining a full history and description of particular cases among a large number of out-patients. For the notes of some of these cases I have to thank Mr. Nettleship.

Three small groups, into which these cases naturally fall, may be headed :

1. Atrophy of optic nerves (hereditary form).
2. Amblyopia, nystagmus, day-blindness.
3. Albinism, amblyopia, nystagmus.

GROUP 1.

CASE 1. *Atrophy of optic nerves in the three male members of a family of seven ; congenital colour-blindness in at least one of these ; similar affection in a first cousin.*—James H—, æt. 32, police constable, was sent to me on April 13th, 1888, by my colleague, Mr. MacKellar. He complained of failure

of sight, which he said began seven weeks previously, when he found he was unable to recognise faces at a long distance. The failure rapidly increased till one week before his visit to the hospital, since then no change has occurred.

V. $\left\{ \begin{array}{l} \text{R. } \frac{2}{60} \text{ and 19 J.} \\ \text{L. } \frac{2}{60} \text{ and words of 18 J.} \end{array} \right.$

Pupils equal and react well to light and with convergence.

He is aware that he has always been colour-blind. His wife states that he would mistake "red for green or green for red."

Fields of vision, measured on the perimeter, are slightly contracted in the inner and outer periphery, the right rather more so than the left. No note has been made of the ophthalmoscopic appearances at this date; there were no marked changes.

The patient is a powerfully built, healthy-looking man; makes no complaint except of his sight. Has always had good health. Knee-jerks present. No ataxy. About three months ago he reduced his weekly allowance of tobacco from two ounces to one ounce; the exact reason for this I could not ascertain. No history of syphilis.

May 30th, 1888.—Has not smoked at all since last visit. Thinks there is no change in his condition.

V. $\left\{ \begin{array}{l} \text{R. } \end{array} \right\} \frac{4}{60}$, fixation eccentric, words of 18 J. badly.
 L. $\left\{ \begin{array}{l} \text{L. } \end{array} \right\}$ Pupils as before.

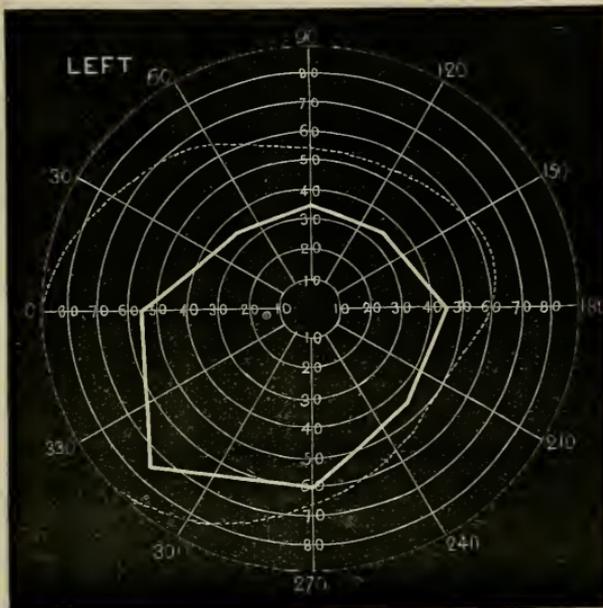
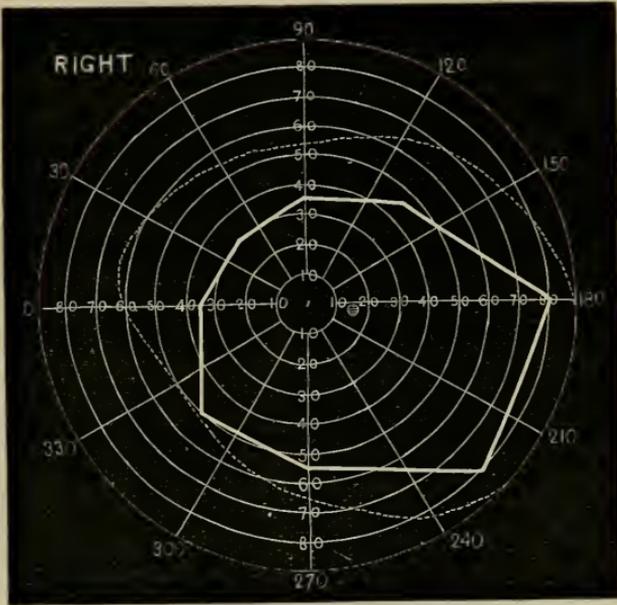
Fields of vision more contracted (see Charts).

Ophthalmoscopic examination.—R. O. D. certainly too white. L. O. D. less pale, but colour suspicious. No change in the retinal vessels in either eye. Media clear.

October 3rd, 1888.—Vision has deteriorated considerably since last visit. There is now bare P. L. in each eye. R. pupil 6.5 mm., L. pupil 6 mm., both act well to light. The discs are now very white and there is a little want of definition in their contour. Retinal vessels not altered. No other changes in fundus.

Patient now states that he "cannot sleep at all." Appetite is good. Complains of "shooting pains" in loins. Right knee-jerk present, but feeble; left knee-jerk not obtained.

This patient's family history is important and interesting. Nothing noteworthy concerning previous generations was forthcoming, but the following details of his brothers and



sisters were obtained. The family consisted of four females and three males.

- | | |
|-----------------------|--------------------|
| 1. Female, æt. 39. | } Have good sight. |
| 2. Female, æt. 37. | |
| 3. Female, æt. 35. | |
| 4. James H—, æt. 31. | } Nearly blind. |
| 5. Harry H—, æt. 28. | |
| 6. George H—, æt. 25. | |
| 7. Female, æt. 22. | Has good sight. |

Three first cousins (two brothers and a sister) on mother's side are nearly blind. One of these (male) lost his sight gradually when about nineteen years old. The other two "are different."

No. 6, George H—, came, at my request, to the hospital and the following notes were made :

Six years ago, when æt. 19, he attended Moorfields Hospital under the care of Mr. Waren Tay, for rapid failure of sight. The following extracts from his out-patient paper which he brought to me, give accurate information of his condition at that time.

"November 2nd, 1882.—V. R. less than $\frac{20}{200}$; 16 J. at 6.
L. less than $\frac{20}{200}$; 16 J. at 6.

"*Ophth.*—Choroid thin round disc, which is normal, but small."

A week or so later a sketch of the right fundus oculi was made, showing a small recent hæmorrhage close to the disc. No heart disease.

The elder brother, Harry, No. 5 in family, was evidently examined at Moorfields at this date, and of him it is noted, "V. failed gradually five years previously, now advanced atrophy of discs, no signs of past neuritis; V. = 20 J. barely."

"November 30th, 1882.—Hæmorrhage has disappeared;

V. R. 16 J.
L. 16 J.

"January 18th, 1883.—No change.

"June 14th, 1883.—Both discs pale; V. R. shadows.
L. 20 J.

"May 12th, 1884.—V. = 19 J." He now ceased to attend

This patient, George H—, had been to the Westminster Ophthalmic Hospital on September 6th, 1882, and on his out-

patient letter, which I saw, his vision is noted $R. \frac{6}{6}$, $L. \frac{6}{6}$, H. m., 1 D.

By November 2nd, when he first went to Moorfields, vision was reduced to $< \frac{6}{60}$, so that the failure had been very rapid. When seen at St. Thomas's, May 2nd, 1888, his condition was as follows :

“ V. R. letters 19 J., incorrectly.
L. letters 20 J.

“ R. P. 3 mm., action to light defective, action with accommodation good. L. P. the same.

“ *Ophth.*—O. Ds. greatly atrophied, very white; large atrophic cup in each. Retinal arteries certainly diminished, and in R. there are very slender white lines along an artery running downwards. No other evidence of previous papillitis.”

Patient is in very good health. Thinks his sight has improved a little since he attended at Moorfields.

The other brother, Harry, No. 5 in family, is said to be “more blind” than James or George. I have been unable to see him, as also the cousins who have defect of sight. I do not know the history as to the use of tobacco in any of these cases, with the exception of the first.

CASE 2. *Atrophy of optic nerves coming on in adolescence, in the eldest of a family of seven, two living. Epilepsy in the mother.*—Walter H—, æt. 20, bookbinder, was brought to the hospital on March 4th, 1886, by his mother, from whom the history of the case was obtained.

Till about two years previously the patient had been able to see well, and had learned his trade; it was then noticed that he did not see well. The defect gradually increased, and has been as great as at present for twelve to fifteen months.

The patient is the eldest of seven; he was a weakly baby, but he did not have snuffles or skin eruption.

2. Male, died aged two years, of “consumptive bowels.”
3. Male, healthy, intelligent.
4. Female, stillborn.
5. Female, died aged one year, cause unknown.

6 and 7. Died aged one year, of “diarrhœa.”

Walter H— has not had any of the usual diseases of childhood, and has only once been laid up, and then with a frac-

tured femur. He has never been a "sharp" boy, but of late has become more dull and quiet. He seems, however, when spoken to, fairly intelligent. He has rather a large, somewhat square head.

The father of patient is a healthy man; the mother has had three epileptiform fits at long intervals, but with this exception has had good health.

On admission, patient's sight is extremely bad. He can with each eye separately see a hand moving before him, but is unable to count fingers. Pupils: Right 4.5 mm., left 3.5 mm., action to light scarcely noticeable.

Ophthalmoscopic examination — Each eye, media clear. Advanced atrophy of optic disc, which is greyish white. Edges of disc are fairly sharply defined; no noticeable excavation. Veins are bordered by white lines. Arteries little if at all contracted. No retinal or choroidal changes. The appearances might have been the result of atrophy following inflammation of optic nerves, but were also consistent with so-called "primary" atrophy; and I thought this to be on the whole the more probable. Moreover, there was a complete absence of history of any illness with brain symptoms either recent or remote.

I was unable to see this patient again; although I wrote to him to come to the hospital he did not attend.

Remarks.—The above cases without much doubt are examples of hereditary optic atrophy, a class of cases to which Leber ('A. f. O.,' xvii, 2, p. 249) first drew particular attention in 1871. In the family under our notice, as in many recorded cases, the disease, so far as the history obtained is reliable, was not, strictly speaking, hereditary; it occurred in persons of the same generation, viz. three brothers and one first cousin (possibly three first cousins). It is noteworthy that (in accordance with the facts elicited by other observers) the taint probably came through the mother, the cousin similarly affected being the nephew of the mother of our patient.

The age at which the disease began followed the general rule in three of the four attacked, In one (my patient) its onset was delayed till the age of thirty-one.

In this patient, James H—, the failure of sight was very rapid; his vision was reduced when I first saw him to $\frac{2}{60}$, and

the evidence was, I think, trustworthy that a noticeable dimness in sight had only begun seven weeks previously. The ophthalmoscopic appearances were those of so-called "primary atrophy," and no good evidence of an inflammatory pre-atrophic stage was obtained.

In the case of one brother, however, George H—, a retinal hæmorrhage was observed during his attendance at Moorfields, and the ophthalmoscopic appearances now are in some slight degree suggestive of previous neuritis.

In Leber's cases, which he called "hereditary optic neuritis," there were usually more evident fundus changes, such as haziness of the margins of the disc, lines along the retinal vessels, and spots or streaks of exudation in their neighbourhood, with some diminution in their calibre.

Case 2 in this group is, perhaps, less typical. There is, so far as I could ascertain, no family history of similar affection, and, in fact, the only history of importance is that of epilepsy in the mother. In some of the recorded cases of hereditary optic atrophy a history of epilepsy was obtained in the patient, or in a brother, sister, or parent.

Since Graefe's paper appeared a number of observers have written upon this subject. In the last volume (1888) of the 'Transactions of the Ophthalmological Society of Great Britain' are two instructive papers by Dr. H. Habershon and Mr. E. A. Browne, on cases belonging to this category.

GROUP II.

CASE 1. *Amblyopia, nystagmus, day-blindness, and colour-blindness in two male members of a family of five.*—Arthur J—, æt. 18, complains of inability to see well, and "blinking and weakness" of his eyes in the daytime, but says he is much more comfortable and can see better in the dusk. His mother states that his sight is "a lot better" in the evening.

V. {	R. $\frac{6}{60}$, not improved.	H.As., 1·5 D. horizontal, 2 D. vertical.
	L. $\frac{6}{60}$. not improved.	H.As., 2·75 D. horizontal, 4 D. vertical.

Each eye reads 1 J. by the aid of a strong + lens.

The left eye has a faint corneal nebula, and diverges. Pupils wide and sluggish.

Constant quick, irregular nystagmus, usually lateral but at times vertical.

Ophthalmoscopic examination.—No gross disease in optic disc, choroids, or retinae; owing to the constant nystagmus it is impossible to speak positively as to fine choroidal or retinal changes.

Colour vision very defective. When examined with Holmgren's wools patient picks out, as exactly alike, light green and pink, green and various shades of brown, rose and purple, yellow and blue-green.

Fields of vision somewhat contracted.

Right, Upwards 35°.

Left, Upwards 40°.

Downwards 65°.

Downwards 65°.

Outwards 75°.

Outwards 75°.

Inwards 55°.

Inwards 45°.

This patient is one of five children. A short account of his elder brother James was given by Mr. Nettleship in the 'Ophthalmic Hospital Reports,' vol. xi, pt. iv, p. 375. As further particulars have now been furnished by the mother, I may repeat some details of the family history. Her five children are living and healthy.

1. George is a sailor, and has good sight.

2. James, æt. 20, *vide* 'O. H. R.,' xii, iv.

3. Arthur.

4. Frederick has good sight.

5. Female, æt. 14, has good sight; is in a situation as a servant.

The eldest child had "thrush" very badly, but no other symptoms indicative of syphilis. A miscarriage occurred between Nos. 1 and 2, and another between Nos. 2 and 3. There is no history of defective sight in any of the relatives: the father and mother and all four grandparents had good sight. No consanguinity in parents.

The patient, Arthur, subsequently came to the hospital on a dark, foggy afternoon. He said that on such a day he could see "well," though his acuteness of vision when tested by types was no greater than at the previous trials.

CASE 2. *Amblyopia, nystagmus, day-blindness, in the two youngest children of a family of three; parents first cousins.*—

Arthur H—, æt. $3\frac{1}{2}$ years, was brought to the Eye Department by his mother March 25th, 1886. His eyes have been noticed by his parents to be constantly moving ever since early babyhood, and for some time past the child has shown signs of defective sight. "He cannot see out of doors, except on dull days;" "In the house he can see to pick up a pin;" "His sight is always better in the evening;" these statements were made voluntarily by the mother. The patient is a "delicate" child, but has had no serious ailments; he did not have ophthalmia neonatorum. There is as yet no evident mental defect.

Although it was difficult to test the child's sight, there was evidence of it being defective; he certainly could not see well in bright light, and seemed more comfortable when wearing smoked glasses. There was constant nystagmus, but I have no note of the direction of the movements, nor of the condition of the pupils. Colour vision was not tested. Ophthalmoscopic examination was made after the use of atropine, and the notes say "Optic discs? pale; they are certainly paler than those of the elder sister; no changes in choroids or retinae; media clear."

The patient is the second of three children, all of whom I have examined.

(1) Female, æt. 6, has good sight, no nystagmus. *Ophthalmoscopic* appearances normal.

(2) Patient, Arthur.

(3) Edith, æt. 8 months, in good health. The mother thinks the child sees well; she is less averse to bright light than the brother. There is constant nystagmus, the "twitching" of eyes has been noticed "since birth."

Ophthalmoscopic examination.—Certainly no gross disease. The child was not anæsthetised however, and consequently examination was not very thorough.

A miscarriage occurred between Nos. 2 and 3.

The parents of these children were first cousins, and both had good sight; the father gave a doubtful history of defective sight in *his* mother; but no other family history of importance was forthcoming.

I did not see these patients again, and have no information as to the further development of the symptoms.

Remarks.—This group includes four cases belonging to two families, and should, perhaps, be entitled “congenital day-blindness with colour-blindness,” under which heading Mr. Nettleship published a paper descriptive of similar cases in vol. x of these ‘Reports.’ In my cases, however, the age of the two patients in the second family precluded the examination of their colour sense, and although there is scarcely a doubt that they belong properly to the same group as those of the first family, and that therefore their colour vision is defective, I have not mentioned colour-blindness in the heading.

The association of mental defect with this form of congenital amblyopia has been noted in several cases; in the cases here recorded there is in the first family no such condition, nor in the second family, so far as can be judged at present.

A family history of similar or allied defects is wanting in each case; in the second family there is consanguinity in the parents.

One point of interest in these and like cases, and upon which we want information, relates to the nystagmus.

Is this really congenital? If it be not, at what age does it appear? We are constantly told by mothers and relatives of patients that the “dancing” of the eyes has been present “since birth,” but I do not know that nystagmus has been noted by a skilled observer either at or within a few days of birth. We are also as yet unaware of the exact relation which it bears to the amblyopia. Is it, even partially, cause or effect?

GROUP III.

CASE 1. *Astigmatism, amblyopia, nystagmus, in the two fair-haired members of a family of six.*—Josephine McC—, æt. 18, and her sister Mary, æt. 13, came to St. Thomas’s Hospital, under the care of my colleague Mr. Nettleship, in October, 1887, complaining of defective sight. Examination gave the following results:

Josephine.

V. R. $< \frac{6}{60}$, + 5 D. cyl. axis vertical $\frac{6}{4}$; 6 J. at 8’.
L. same.

Pupils active to light and accommodation. Irides blue-grey. T. n. Marked rapid oscillatory movements of both eyes. These movements are of greater extent but less rapid when she puts any of the ocular muscles on the stretch by looking to one side. Colour vision good.

Mary.

V. $\left\{ \begin{array}{l} \text{R. } \frac{6}{24} + 4 \text{ D. cyl. axis vertical } \frac{6}{18} \text{ partly; } 2 \text{ J. barely} \\ \text{at } 8''. \\ \text{L. } \frac{6}{24} + 4 \text{ D. cyl. axis vertical } \frac{6}{18} \text{ partly; } 1 \text{ J. barely} \\ \text{at } 8''. \end{array} \right.$

Pupils normal in action. Irides blue-grey. T. n.

Nystagmus movements similar, but less marked than in the sister's case. Colour-vision good.

The mother of these patients who came with them stated that the "dancing" of their eyes dated from an attack of scarlet fever twelve years previously, and thinks that the movements of the eyes were worse when they first came on than now. Neither patient had ophthalmia neonatorum.

Family history (from mother).—No history of defect of sight in relatives. Mother healthy, V., R. and L. = $\frac{6}{6}$. Father has chronic rheumatism; his eyes are steady, and sight good. Six children are living, two have died, and there was one miscarriage.

1. Sex ?, æt. 20, healthy.
 2. *Josephine*, æt. 18.
 3. Died æt. 9 months, "fits."
 4. Miscarriage.
 5. Died æt. 3 years, "scarlet fever" 12 years ago.
 6. *Mary*, æt. 13.
 7. *Louisa*, æt. 11
 8. *Rose*, æt. 9
 9. Male, æt. 7
- } healthy.

Josephine and *Mary* both had "fits" when teething, but otherwise were healthy babies. Both had scarlet fever badly when aged six years and one year respectively; their eye symptoms are said to have begun after recovery from the fever. Only one other child had scarlet fever, viz. No. 5, who died in the attack.

These two patients are of very fair complexion, and have light flaxen hair. The elder has much lighter hair and a

rather fairer skin. They are, however, not nearly as fair as albinos. All the other children are said by the mother to have dark hair but blue eyes; all have good sight. The two next below Mary, viz. Louisa and Rose, were subsequently examined. They have almost black hair and blue eyes. No nystagmus, sight good. The former has H. 1·5 D., the latter H. ·5 D. in each eye.

CASE 2. *Astigmatism, amblyopia, nystagmus, in three albinotic members in a family of five.*—Katherine McK—, æt. 29, single, came under my care on January 1st, 1888, complaining of defective sight.

V. R. unaided $< \frac{6}{60}$; 8 J. at 5".
L. unaided $< \frac{6}{60}$; 6 J. at 5".

When atropised she chose for each eye + 3 D. sph., + 4·5 D. cyl., axis vertical, and with this combination each eye read $\frac{6}{60}$. No defect of colour vision. Fields of vision not measured. Pupils normal; constant lateral nystagmus, which has been noticed since early childhood. No ophthalmoscopic changes.

The patient is an albino, although her hair has rather more colour than that of many albinos. Her irides are very light blue, not so completely devoid of pigment as sometimes seen in this class of people. She has good health, and sees well enough to attend to household duties.

Family history.—Parents living, both dark complexioned, both have good sight. Mother had some fair-haired sisters, but none so fair as patient; they had good sight. Father has one fair-haired brother, his sight is good. Father's other brothers were dark haired. No history of defective sight or colour-blindness in collateral branches. My patient is one of seven children of one father.

- | | |
|---|-------------------------------|
| 1. M. (child of first wife), died abroad; had good sight. | } Children of
second wife. |
| 2. F., æt. 29, Katherine. | |
| 3. M., æt. 27, a clerk (see below). | |
| 4. F., æt. 25, schoolmistress. | |
| 5. F., æt. 23. } Dark hair, eyes steady, | |
| 6. M., æt. 22. } sight good. | |
| 7. F., died, æt. 18, of "consumption and fever." | |

Of the above, Nos. 2, 3, and 4 are albinos, and all have nystagmus and defective sight. No. 3 attended at St. Thomas's in 1887 under Mr. Nettleship, from whose notes I abstract the following: "Wears glasses ordered here five years ago; they are + 4.5 D. sph., + 3.5 D. cyl. axis vertical, with these V. = $\frac{6}{36}$ and 6 J. Marked lateral nystagmus." No. 4 in the family I have seen but have not had an opportunity of examining her eyes. She is rather more albinotic than her sister K—; wears glasses constantly, they were ordered at Moorfields and "specially made for her." She is a schoolmistress and gets on fairly well; she is said to have no colour defect. Her eyes "dance" constantly.

Remarks.—In this group I have put together short notices of five cases (four females and one male) from two families, presenting very similar symptoms. In each family the fair-complexioned members suffered, while the dark-haired children escaped; the two sisters McC—, though very fair, were not albinos, but the three members of the second family certainly were.

The ocular symptoms were almost identical in the five cases, and all showed a high degree of hypermetropic astigmatism (? third case in second family). They were all free from any other congenital defect, and were of quite average mental capacity. In each family there was a complete absence of history as to similar or allied conditions in previous generations or collateral branches.

In the 'Ophthalmic Hospital Reports,' vol. xi, pt. 4, p. 366, Mr. Nettleship has published a remarkable history of a very similar condition affecting the blue-eyed males of two collateral branches of the same family; in this family the defect is known to have occurred in three generations. All the females and all the dark-eyed males escaped, while nearly all the blue-eyed males suffered.

In those whom Mr. Nettleship had an opportunity of examining a high degree of ametropia was present: in one patient myopic astigmatism in the right eye, hypermetropic astigmatism in the left. In the other patients there was high hypermetropic astigmatism, as in the cases narrated above.

These cases are of very considerable interest, and comparatively rare. As one of the forms of congenital amblyopia,

they are allied to those of Group II, but differ from them very markedly in some details. What is the exact connection between the nystagmus and the ametropia, and to what extent, if at all, one is dependent upon the other, and also the relation in which both stand to the congenital absence of pigment, are questions as yet quite unanswered.

SOME REMARKS
ON THE
CULTIVATION OF THE FACULTY OF
OBSERVATION,
IN PROFESSIONAL WORK.¹

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Introduction. The senses, their employment and education. Perception and Reflection. Method in observing. Self-reliance. Reading. Objective and subjective evidence. Consistency of signs and symptoms with each other. Symmetrical examination in disease or injury. Effects of treatment. Reasoning on things observed. Books and their use. Conclusion.

THE ability to make a correct diagnosis in disease or injury depends on experience obtained from personal observation. The experience derived from the observation of others is of comparatively little value: we cannot observe with other people's senses. It may seem paradoxical to say that there may be a form of experience without intelligent observation; yet such, in a certain sense, is the case. I have known men whose opportunities of seeing and of treating disease have been far beyond the average, yet upon whose opinion I should place very little reliance, because they have failed to improve their opportunities by cultivating the habit of thoughtful observation, and have neglected to record and classify facts which are brought under their notice in daily practice. I

¹ Read before the Physical Society of the Hospital, Oct. 18, 1888.

have also known some very advanced students—and when do we cease to be such?—who seem to be incapable of appreciating original observation, and who, when anything which is new to them is pointed out, enquire whence it was indirectly derived. Others, again, are always making discoveries, conceiving that what they learn, by observation, for the first time must be new. The latter class are far more hopeful than the former. They evince a power of observation, which requires discipline, culture and modesty, to render it effective and valuable. We often see a similar contrasted tendency in practice; some young men being devoid alike of resource and of confidence in their treatment of disease: whereas others, in an overweening reliance on physic, are constantly experimenting and making imaginary discoveries; treating the organic laboratory as if it were a chemist's dispensary, bound to obey all the laws of the inorganic world, and to respond to their ideas of the way in which each ingredient in their prescriptions ought to behave. They begin at the wrong end, failing to observe the potential influence of vitality on all such meddling, and ignoring the benignant tendency of nature in the relief of disease, and in counteracting the too often mischievous interference with her operations. In each extreme the result may be traced to the same cause, defective or ill-trained observation.

I remember a remark of Mr. Travers, when I was his pupil, which sank into my mind, as pithy sayings will do in youth, when the mental wax is soft and impressionable. I was telling him of something which I thought to be new and, no doubt, correspondingly important. His rebuke was a gentle one. "You will find," he said, "many old dishes served up under new covers." My experience has certainly verified this prediction, especially since the variation and complication of names has rendered modern nomenclature somewhat perplexing to older pathologists. At least I have found it so. It is not infrequently difficult to recognise old friends when introduced under new names. Nevertheless, these re-discoveries, if they are real and not imaginary, are among the most valuable of the stores laid by for future use. They are not borrowed, but realised property, the value of which is appreciated, and which will not be wasted or lost.

It is unnecessary to remind you that we obtain all our knowledge of the world around us through the medium of our senses; and upon their education much of our future usefulness depends. In animals the relative development of the different senses is determined by their habits and requirements; and sight, hearing and scent, severally, attain a degree of perfection in different species, as in the eagle, the deer and the blood-hound, far exceeding that in the human race. But the range of man's senses is much more expanded than that of other animals, in, for example, the appreciation of form, colour and beauty by the eye, of melody and harmony by the ear, and of various odours and tastes. The delicacy of the sense of touch in the tips of the fingers is also a natural endowment of great value; whilst the capacity of the sense of taste is largely called into requisition and appreciated by the educated palate of the epicure.

It is said, and I believe with perfect correctness, that the senses of sight and hearing are much more acute in the savage than in the civilised man. This, no doubt, is partly due to inheritance; but more especially so to education. This delicacy of sensuous perception is rendered necessary for them, as for animals, by their environment, to enable them to survive amid the difficulties and dangers which surround them: it is by observation that they acquire that accuracy in seeing and hearing on which their lives so much depend.

This acknowledged acuteness of the senses in savages induced a French physiologist recently to institute a series of experiments on criminals, with the view of ascertaining whether this class, from their alliance in point of civilisation to savages, is not similarly endowed with quickness of sensuous perception. A negative result demonstrated, as might have been expected, the fallacy of the suggested analogy: for, in the case of criminals, necessity does not compel the cultivation of special senses, and the influence of heredity is absent. Ingenuity and dexterity in planning and executing his designs is often displayed by the practised criminal; but, in civilised life, nervous sensibility and delicacy of sensuous perception seem to be generally commensurate in degree with culture and refinement. It is sufficient to allude

to the well-known fact that privation of one sense, as in the deaf-mute and the blind, tends to sharpen other senses which are used vicariously of them: and this is specially exemplified in those deprived of sight, of whose delicacy of touch many remarkable instances are recorded. I mention these things to prove how much may be done for the senses, those inlets of knowledge, by education, under the imperious demand of necessity.

The training of the senses may be illustrated by a few examples. First of sight. It is by the Eye that we observe variations in colour, form and size. The presence or absence of symmetry is thus detected; but, beyond all, we are often enabled to form an accurate opinion of the condition of a patient by his aspect and expression of countenance. The medical man should be a physiognomist; and if he be observant he can scarcely fail to become one. How much does the expression of the eye alone convey to the intelligent observer of the condition of his patient. The glittering but delusive gleam of consumption; the eager and restless glance of approaching delirium; the furtive look of the malingerer;—each tells its tale to the expert, though unnoticed or misinterpreted by others. The complexion characterises many diseases, as jaundice, ague and hectic; but all need study to associate them with the morbid conditions with which they are allied.

The Ear is most valuable to the physician, but not without its uses to the surgeon. I need only allude to the information acquired by auscultation and percussion in diseases of the lungs and heart, for this part of my subject to be readily understood: for regular and systematic training, by observation, can alone qualify even the most gifted to form a just and accurate diagnosis in diseases of the chest. In surgery, the presence of stone or a distended bladder, the seat of internal strangulation or the condition and contents of a hernial sac; the presence of aneurism; the crepitus of fracture,—are all aided by the ear, which is trained by repeated observation.

But still more is the practised sense of Touch of essential value to the surgeon. The instances I have just mentioned, with numberless others, exemplify the importance of educating

the hand. I will cite only two illustrations. How much is learned, involving even life and death, of the impulse of the heart's action and the condition of the circulation, by simply placing the finger on the radial artery. Yet how long, how careful, and how thoughtful must be the training to elicit the full value of this simple act.

Again, the surgeon rarely passes a day, without being required to form an opinion on the nature of some morbid swelling, which is outside the range of any other sense. Is the tumour fluid or is it solid; is it fat or some malignant growth; is it aneurism, abscess or cyst; is it fixed or free? I know of few manual acts that demand longer and more careful training than the detection of deep-seated fluctuation; and there are also few conditions on which so much in diagnosis depends. Indeed I regard skill in this respect as no mean test of educated manipulation; and its difficulty is proved by the difference of opinion which is often expressed in the diagnosis of an obscure case, even by experienced surgeons.

It is needless to speak of the senses of Smell and Taste: they are less important, yet should not be neglected; for there are many ways in which they may be employed; *e. g.* peculiar odours are associated with some diseases; and the insanitary condition of a sick room may be detected by the foulness of its atmosphere.

But the question is, how are the senses to be educated? I can answer this enquiry negatively, but it is not so easy to give a positive reply except in very general terms. They certainly cannot be trained by the student sitting at home, and pretending to learn his practical work from books. Neither can he educate them by simply watching others when engaged at the bedside of the patient. In one word, he must be self-taught. Certainly the clinical teacher may help him by directing him what to look for, and by correcting him when wrong: but he must depend for his training on his own observation. A disciplined use of the senses cannot be communicated from one to another; it is a purely personal acquirement, for the neglect of which no amount of book-learning can compensate.

There are now many adjuncts to aid the observer in the

use of his senses, which did not exist when I was a student. Indeed most of them—the laryngoscope, the ophthalmoscope, the endoscope and the sphygmograph and clinical thermometer are of comparatively recent introduction. When I began the stethoscope was just introduced; and a cumbrous instrument it was that I carried when I was clinical clerk to Drs. Elliotson and Roots. It is needless to remark that its extraordinary utility has fully justified the sanguine expectation of the great physician who first used it.

I would say one word in favour of another mechanical aid in observing, and that is the art of delineating what is seen. This power, when it exists, is valuable in developing the faculty of observation; for it requires accurate attention to make a truthful drawing or diagram; and when made it is an enduring memorial of what has been seen and critically scrutinised. Many members of our present staff exemplify these remarks, notably Dr. Bristowe and Mr. Anderson, as well as others. All who knew Mr. Stewart will remember how admirably he illustrated his lectures with his pencil. I would say, then, to all who possess any taste for drawing,—cultivate this art sedulously, and use it in the way I have suggested.

There are many qualities which a carefully disciplined habit of observation tends to develop. Our knowledge, as I have remarked, is first acquired by *Perception*, but it is utilised and rendered fruitful by *Reflection*.

In observing the natural character of individuals, we may notice that, generally one or other of these qualities predominates; but it is the possession of both in a rare degree that constitutes the characteristic of the more highly gifted. A quick perception is a great charm in those with whom we hold intercourse; but it may be a snare to its possessor unless balanced and steadied by reflection.

These mental characteristics are fed by observation, and the activity of their employment has great influence in determining the practical qualifications of the medical man. By this I mean that the faculty of perception may be well developed, but it requires voluntary attention for its exercise. Again, there may be quick perception and ready appropriation of whatever is presented for observation: but if knowledge

thus acquired be simply stored in the memory, without reflection on its relation to other knowledge previously possessed, it loses much of its value, and is comparatively fruitless. Such mechanical accumulation of facts may serve to supply precedents in daily practice, but nothing further. I shall have a few more words to say on this subject before I conclude.

If these faculties are to be nourished by observation there must be method in observing. It is well to be alive to all that is going on around us, but we must guard against the distraction of the attention from that which, at the moment, most imperatively demands it. Desultory attention in observing, and wandering thoughts in reflection, are alike pernicious, and demand a vigorous control. It was not by indulging such erratic temptations that John Hunter or Darwin have left imperishable monuments behind them.

One of the most valuable results of methodical observation is self-reliance : and this, if well founded, is the sheet anchor of the medical practitioner in the daily exercise of his profession. Self-reliant in one sense he must be, whether he will or not : but if he neglect the means of justifying his confidence in his own resources, his practice can prove only a humiliating failure, and his life an unenviable record of error in diagnosis, and consequent ignominious helplessness in the treatment of disease.

Again, the advantage to be derived from reading is infinitely enhanced by personal observation. We are thereby enabled to verify the accuracy, or to correct errors and imperfections in the conclusions we may have drawn from what we have ourselves observed ; or, it may be, to catch the writer tripping in these respects ; for authors are mortal, and not all good observers ; and compilations are very apt to perpetuate errors in medicine as well as in history, where statements are copied without personal verification.

It should be remembered that method in observation includes the order in which things are to be observed. Thus, the study of physiology, or the healthy performance of function, must precede that of disease, as an acquaintance with anatomy is essential for the pursuit of pathology. For how can abnormalities of organs be advantageously studied

without a previous knowledge of their normal structure and functions, whereby a comparison may be instituted, and the deviations from a healthy standard determined?

Good books, properly used,—by which I mean as supplementary to clinical teaching—are valuable helps to the practical student; but there are many things which no book can teach. There are various complicated circumstances in cases which are continually brought under our notice, in which mere precedent will afford only an uncertain and partial help, and book knowledge alone is valueless. Take, as a familiar example, a bad compound fracture, in which you are required to determine whether a limb shall be sacrificed or an effort be made to save it. A decision is not to be arrived at from a simple contemplation of the local injury; but a number of collateral circumstances have to be investigated and weighed, which importantly bear upon the question. Such, *e. g.* are the age, the temperament, the habits, and the general health of the patient. The condition of the heart and lungs, and of the great vessels must be ascertained, as well as the state of the arteries generally as regards their elasticity or rigidity. Locally, the attention must not be confined to the bone, but must be directed also to the amount of contusion or laceration of the soft parts, and especially of the blood-vessels and nerves. How it is possible for all these circumstances to be properly considered, and to have their due import attached to them by a book-learner,—by one who has not stored up the fruits of observation, when such cases were brought under his notice during his hospital studies? In medicine it is so likewise. Many a home student, who neglects the opportunities of clinical instruction, may write an admirable essay on pneumonia or pericarditis, and yet be utterly at a loss by the bedside. But enough has been said on this subject, and I turn to the consideration and illustration of the manner in which observation may be turned to the best account.

The association, separately or conjointly, of Signs and Symptoms—by which I mean that which is objective and that which is subjective—is an important element in the observation of disease, with a view to correct diagnosis. In some instances this alliance is very palpable, whereas in others it is

very obscure. Objective evidence includes all that can be brought under the direct cognisance of the senses: *e. g.* not only the deformity and crepitus of a fracture, but the condition of the pulse and tongue of the patient: and the value of this form of evidence is, of course, commensurate with the skill and experience of the observer. In some instances a single sign presented to a single sense is sufficient to determine the nature of a disease or injury: in others it may prove fallacious. I will take my illustrations from surgery. We will suppose two patients to be brought to the hospital who had fallen from a height. On stripping them, the leg of one is seen to be bent in the middle, forming an obtuse angle, over which the skin is tightly stretched. Further examination in this case is not needed: there must be a fracture of both bones of the leg to permit this deformity;—an inference which would be still more palpable, if the broken bone had penetrated the skin. In the other case the fallen shoulder and hollowed deltoid, with prominence of the acromion, at once suggest a dislocation of the humerus. But would it be safe, as in the other case, immediately to act upon this evidence? Assuredly not; for there are other injuries near to this joint, in which the deformity very much resembles that of dislocation; and careful examination is necessary before a trustworthy diagnosis is arrived at. I have known many mistakes made under these circumstances, detrimental alike to the patient and his medical attendant. Therefore, it is a good rule never to omit any means of testing the correctness of our diagnosis, in cases where there is the slightest room for doubt. I think such searching enquiry is the general practice of those who have most experience: and they are they whose observation has been most extended and intelligently critical. It is, then, upon the association of objective indications that the surgeon depends chiefly for his diagnosis; and it is by the carefully studied and repeatedly observed alliance of these signs that he is enabled to form an accurate estimate of their separate or associated value.

Thus far the perceptive faculty is specially called into activity; but supplementary evidence afforded by subjective symptoms taxes much more the reflective faculty. Objective evidence may be obtained without questioning a patient:

indeed, as a rule, it is better to exclude all interference on his part whilst we are collecting this form of evidence, and to depend entirely on our own observation. But for *subjective* symptoms we are compelled to depend on our patient in great measure ; and in eliciting information great tact and an unprejudiced mind are required. Generally it is injudicious to ask leading questions where it can be avoided,—especially, though not exclusively, when the patient is uneducated : more trustworthy information is obtained by allowing or encouraging him to tell his story in his own way. The presence or absence of pain on pressure, *i. e.* tenderness, is an important ingredient in the diagnosis of many cases : and here it behoves the practitioner to be very observant of his patient's countenance and other indications by which he may distinguish between real and simulated suffering. Again, the genuineness or otherwise of subjective evidence, such as various sensations complained of, may be tested by noticing whether they are consistent with other evidence that has been already verified. Thus, the diagnosis that peritonitis is present, because complaint is made of acute pain on pressure over the abdomen, would be inconsistent with a cool skin and quiet pulse, and the notable circumstance that a light touch provokes more complaint than heavy pressure. Again, the presence of a soft and tender tumour in the groin, accompanied by sickness and other evidence of constitutional disturbance, might suggest strangulated hernia, but for the absence of other indications which forbid the conclusion. I remember being summoned to some distance to operate on such a case, which had been well manipulated in the effort at reduction ; but the true nature of which I was soon able to demonstrate by opening a suppurating bubo. I can also recall instances in which extravasation of urine has been mistaken for orchitis or erysipelas of the scrotum. In one such case there was a large bag of mixed pus and urine in the perineum ; in another gangrene had extended half way up to the umbilicus ; and in neither case was the cause suspected. The practitioners who called me in were my seniors and have long since passed away. But what is the explanation of these fatal errors ? The answer is, neglected or careless clinical observation.

In our study of disease or injury it behoves us to be mind-

ful of natural or acquired deformities, which, if not recognised, may prove a serious source of embarrassment. This does not occur frequently; but I have known it to happen sufficiently often to render it worthy of the attention of the practitioner.

There is one method to be followed, especially in observing surgical injuries, to which I am disposed to attach much value in making the necessary examination for forming a correct diagnosis. It is that of symmetrical observation, and with one sense at a time. I can best explain my meaning by an example. I will suppose I am dealing with an injury to the shoulder. I have my patient placed before me, and notice with the eye, both before and behind, the exact deviations from the normal condition observable in the limb that is injured. Next, in order to avoid the snare I have just spoken of, I enquire whether the two shoulders were previously alike, and whether, before the accident, the patient had free use of both arms. I then place myself behind him, closing or averting my eyes,—as the physician does in using the stethoscope—and put the forefinger of each hand upon the corresponding sterno-clavicular articulation, and carry it slowly along the line of each clavicle, by which I am conducted to the acromion process. Thence the finger travels along the spine of each scapula, and its inner and lower angles are also explored. To the practised hand the slightest difference would be revealed; and if there be none, the seat of mischief is thus circumscribed. The joint is then examined in the same way, both by touch and sight, but by each separately, so that impressions may not be confused. A similar proceeding is equally available in other injuries of the limbs and trunk, where a symmetrical comparison can be made; and generally with much advantage, both as regards exactness, and the saving of time and inconvenience to the patient as well as the surgeon.

I will briefly notice but one more precaution to be taken in the examination of injuries: it is that of ascertaining how the accident happened, the direction of a fall, the soiled condition of the clothes, and especially what bruises or other indications of hurt may have been received. All these things should be carefully observed, as they may throw light on an obscure injury. These circumstances have generally an essen-

tial bearing on accidents to joints. In dislocation of the hip, the position of the limb at the time very much determines the direction in which the bone is displaced. In injury to the shoulder, if you find that the palm of the hand is soiled or grazed, or that there is any other indication that the patient fell with his arm outstretched, a dislocation of the head of the humerus may be suspected: whereas indications that the patient has fallen on the shoulder would suggest fracture as the more probable cause of the deformity. Again, in injury to the head, the nature of the ground on which a patient has fallen, head downwards, may help us in forming our diagnosis as to the cause of prolonged insensibility; fracture of the vertex being more likely to occur on hard ground, and fracture of the base on a soft and yielding surface:—a point to which I directed attention in my lectures before the College of Surgeons.

It is needless to remark that the effects of treatment, whether in our own practice or in that of others, should be carefully observed: and this is a reason why treatment should be simple, and uncomplicated by the admixture of various ingredients. In surgery this remark applies especially to the management of operations, and the dressing of wounds. In such cases I am disposed to place very little confidence in adventitious aids, and to rely on perfect cleanliness, and absolute physical, and as much physiological rest as can be obtained, consistently with such requirements as may be demanded in special cases. In medicine it is, possibly, more difficult to adhere to this rule of simplicity: yet one can scarcely wonder that our list of specifics has been so long almost stationary, and that the most diligent observer is so constantly thwarted in his research, when the complicated style of prescribing, so commonly in vogue, is considered. But I feel I am travelling wide of my subject, and that I should apologise to my medical brethren for this remark: yet I cannot but wish that, for the sake of therapeutics, prescriptions contained fewer ingredients than they usually do in private practice. It is, of course, difficult, if not impossible, for the observer to unravel the mystery of some of these compounds, and he must be content to accept the dictum of the prescriber. In noticing the effects of treatment in which the

means employed are necessarily complicated, a careless observer is very apt to attribute consequences to wrong causes ;—an error which, in heroic hands, is not infrequently fraught with much mischief.

I have said a good deal on the subject of how to observe and what to observe : but the question remains to be answered, whether observation, even when studiously cultivated and well directed, is alone sufficient to make the experienced and trustworthy physician or surgeon. Hear what Frank Buckland says respecting himself when past 40 years of age. “ I thank God the Dean (his father) gave me a good soil at Oxford, which will grow almost any seed placed in it, and I must now plant a new seed. Those of observation have grown into big trees long ago ; I must now plant the tree of mental reasoning upon things observed.” (‘ Biog.,’ p. 224.) It may be doubted whether, in this implied self-censure, Buckland did himself justice,—whether, indeed, his modesty did not betray him into doing himself a grave injustice. Nevertheless his words embody an important lesson ; for observation, without reasoning on the things observed, is like collecting plants without arranging or classifying them ; like accumulating the materials for a building without putting them together. Bare observation of facts, as I have already remarked, may serve to guide the man of precedent ; but, without the exercise of reasoning on those facts, it cannot raise him into the higher region of justifiable self-reliance in his daily practice : for such is the attainment only of the man who has fixed principles to guide him. It cannot, therefore, be too strongly or too early impressed on the student that reasoning must accompany observation. I do not mean that he should be encouraged to generalise upon limited data : this would be avoiding one evil to fall into another :

“ *Incidit in Scyllam qui vult vitare Charybdiin.*”

But he should be taught the value of enquiring into the causes of what he sees, and of cultivating the habit of classifying the results of his observation, with a view to their future utilisation, as he raises the superstructure of his edifice. Unhappily, as I venture to think, this does not seem to be the line pursued in modern education, the special aim of

which appears to be the ingestion of as many facts as possible, with but little reference to their classification or even their permanent retention. Mental peptone is supplied irrationally in the form of knowledge-made-easy books; and the consequence is a loss of appetite for, and enfeebled power of digesting, plain and wholesome food.

The practical manuals for the use of students in the present day seem to me calculated to discourage personal observation, by supplying details, to be committed to memory, instead of being sought and observed. The so-called "systems" of surgery are a comparatively modern innovation. When I was a student we had Cooper's 'Surgical Dictionary,' which was used for reference; but we had to seek for written information on subjects which interested us in monographs, which had all the freshness of original observation:—mental pictures which infinitely transcend in value the much-abused and often mischievous substitute of pictorial illustration. I would say to student and young practitioner alike, take as your guides such books as, from their suggestive style encourage or compel you to learn by observing for yourselves: and beware of attempting to learn either anatomy or surgery from pictures. Yet I would not be misunderstood as depreciating the many excellent and exhaustive systematic works on medicine and surgery, which have been published in late years. I desire simply to condemn the abuse of them: and in this I think I should have the concurrence of their authors. They are a snare to the student who is tempted to "get up" his practical work by them alone: whereas they should be used rather as works of reference, and be read only as ancillary to clinical work, whereby the learner may be guided in his studies by the experience of qualified teachers.

I am aware I have but touched the fringe of a large subject, on which a volume might easily be written. And I have ventured on the privilege of the aged to be sententious, and to lay down rules for the guidance of my younger brethren, which they may think, if not irrelevant, at least superfluous. I would now crave your indulgence for one concluding word.

The value of observing depends on its accuracy. A loose or inaccurate observation is often mischievous because mis-

leading ; whereas accuracy tends to the development of that which is trustworthy and true : and the quest of truth is, or should be, the great purpose and aim of all scientific research. In cultivating this habit of accuracy in observing, we should especially beware of allowing ourselves to draw conclusions without having sufficiently tested the value of our data, or by mistaking the *post hoc* for the *propter hoc*. At the same time it should be remembered that there is a risk of falling into an opposite extreme. Scientific scepticism is admissible, indeed in a proper sense essential, in the investigation of Truth ; but it should be tempered by a reasonable reliance on accepted facts and the testimony of trustworthy witnesses.

There is yet another phase of scepticism against which the earnest student needs to be guarded : it is that of rejecting what he cannot understand, simply because it is unintelligible to him. There is scope for faith—the evidence of things not seen—in Science as well as in Religion ; but in each it has its limit. Faith, uncontrolled by reason, degenerates into ignorant credulity and superstition ; and scepticism, by indulgence, becomes arrogant presumption : and each extreme is destructive of that evenly balanced state of mind, alike receptive and critical, which is best adapted for scientific research and the apprehension of Truth.

N.B.—For some remarks on note-taking, as an important aid to observation, the reader is referred to vol. xiv, p. 1.

ON THE DIAGNOSIS
OF
ADHESIONS OF THE PERICARDIUM.

BY W. M. ORD, M.D.

THE following paper contains (1) the substance of more than one clinical lecture delivered at St. Thomas's Hospital, and (2) a detailed report of two cases in which adhesion of the pericardium was recognised during life.

SECTION I.—CLINICAL LECTURE.

A year or two ago two boys occupied adjoining beds in George Ward. They were both subjects of disease of the heart subsequent to acute rheumatism. In one I believed that I recognised signs pointing to the existence of adhesion of the pericardium. In the other the signs were not recognised. And we often compared the two cases, for teaching purposes, adding, in our discussion, to the signs of hypertrophy of the heart, present in both, the signs indicating adhesion of the pericardium, present in one, absent in the other. Both died, and, when submitted to post-mortem examination, both were found to have adhesion of the pericardium. The diagnosis, however, was not so far from the truth as this bald statement would suggest. For the term "adhesion of the pericardium"

comprehends a series of morbid conditions, some of which can be diagnosed, some of which cannot be even approximately diagnosed. One of the cases belonged to the first class, the other to the second. A comparison of the two cases will help us to remember that adhesion of the pericardium has a very different meaning in the aspect of diagnosis from what it wears in the aspect of morbid anatomy.

Anatomically we may see, in the first place, as the result of pericarditis, a simple growing together of the parietal and visceral layers of the pericardium, determining partial or complete obliteration of the sac. This we may call "simple adhesion."

In the next place, we may see, in addition to adhesive inflammation within the pericardial sac, the existence of inflammation on the outer aspect of the sac going on to the production of adhesions between the outer surface of the pericardium and the parts in contact with it. Thus, we may see attachment of the pericardium to the back of the lower part of the sternum and the back of the lower left costal cartilages, or of the pericardium to the pleura, particularly on the upper and left aspect of the heart. We may further find that inflammation has involved the pleura where the lung overlaps the heart, and sometimes in this region we may find a continuous implication of pericardium, of both layers of pleura, and of lung, linking the heart-substance to the chest wall. Looking at another anatomical detail bearing on diagnosis, we can readily understand that adhesions between the pericardium and the chest wall will be found to vary much in their superficial extent and in their closeness and strength. They may, for instance, be restricted to the upper part of the area of contact, or to the lower. They may be short and serried or they may be long and scanty. Generally they are shorter and more unyielding in proportion as more and more of the surface of the pericardium is adherent, whereas in cases of limited adhesions the fibres of union are usually longer and less compact. For the purpose of distinction we may call all such additional connections "compound adhesions," and, as bearing on diagnosis, we may at once state broadly that "simple adhesion" gives no trustworthy signs; that strong and extensive adhesion of the pericardium to the chest-

wall—complete “compound adhesion”—gives many trustworthy signs ; that more limited or partial compound adhesion gives, as might be expected, imperfect, though not seldom strongly suggestive signs.

In order to lay for ourselves a foundation of diagnosis of adhesion of the pericardium, let us proceed to make out a list of the signs to which we have to trust, determined partly by morbid anatomy, partly by clinical observation and experience. We may put down :—

1. Changes in the form of the chest over the heart.
2. Changes in the respiratory movements over and around the cardiac area.
3. Extension of the area of cardiac dulness.
4. Changes of position of the true cardiac impulse or apex-beat ; and variations in the force of the same.
5. Extension of the area of impulse.
6. Fixed position of the apex-beat.
7. Fixed limits of the area of cardiac dulness during the extremes of respiratory movements.
8. Epigastric pulsation.
9. Diastolic rebound.
10. Murmurs.
11. Diastolic collapse of the veins of the neck.
12. Size of heart.

We may begin by observing that some of the signs set down belong in common to pericardial effusion and to adherent pericardium ; that again some belong, in common, to enlargement of the heart and to adherent pericardium. Upon a consideration of the signs in succession we shall be able to put them into groups, and fix the various diagnostic centres about which the groups are clustered.

1. *Changes in form of chest.*—Inspection of the chest-wall will, in adherent pericardium, often lead us to recognise a projection of the chest wall over the cardiac region. That is to say that, beyond the changes in the form and prominence of the left costal cartilages and adjoining parts of the ribs corresponding to successive movements of the heart, we may recognise that the whole area is permanently more prominent than the corresponding area on the right side. There are exceptions to this which we will consider later on.

2. *Changes in respiratory movements.*—In adhesion, the respiratory movements of the chest are more or less restricted on the left side, particularly over the cardiac area and its confines; the restriction being, therefore, best observed when the chest is viewed from the front or side, inspection from the back detecting very little if any difference. There is no difficulty in understanding that those parts of the lung which overlap the heart have their mobility impaired by compression or consolidation, and that, consequently, the parts of the chest-wall corresponding to such parts of the lung move with diminished freedom.

In not a few cases the lung-substance is affected by continuity of inflammation, and the restriction of movement then extends its borders.

3. *Extension of area of cardiac dulness.*—On percussion, the area of cardiac dulness is found to exceed its proper limits. Chiefly, and most importantly, its upward limits. The extension upward varies in two important degrees;—1st. If the adhesions connect, collectively, the two layers of the pericardium, the outer layer of the pericardium and the chest-wall, the dulness may extend upward on the left of the sternum to the second space of the second cartilage; 2nd. If the pleura be involved there may be dulness, complete or comparative, up to, or in, the first intercostal space. In the first case, the dulness at its upper border will not exceed in breadth the length of the cartilage. In the second, it may have indefinite horizontal extension. The rest of the cardiac area will generally give widened dulness, extending on the right to the middle or to the right border of the sternum, on the left in an oblique line stretching downwards and to the left beyond the normal frontier to a point below and external to the nipple. The limits of the increased area are usually much more clearly marked than the limits of the cardiac area in health. There is much less borderland of diminished resonance between the complete dulness yielded by the heart-substance and the full resonance of the lung than in health.

Post-mortem observations show that the association of pleural with pericardial adhesion is very common. My friend Mr. Herbert Milton, formerly my house physician, and now well known as doing splendid hospital work in Cairo, has

been good enough to supply me with an analysis of various symptoms in thirteen cases of adhesion of the pericardium, wherein post-mortem examination was made. Of these cases ten presented such adhesions. In six of these the left pleura was adherent; in one the right was adherent in front, in three there were adhesions on both sides. You will readily see that the existence of such adhesions will tend to develop with greater intensity the signs of adhesion of the pericardium. Expansion of the lungs being prevented, much that would have prevented the recognition of the movements of the heart is annulled.

4 and 5. *Impulse*.—The position of the apex-beat or of the point of strongest impulse is altered. On this point there is a conflict of authorities. Some maintain that the true impulse is to be found near the sternum, others that it is to be found further from the sternum than in health. In the cases which have fallen under my observation the position of strongest impulse has varied considerably. Mr. Milton's analysis shows, in respect of position of impulse, that the point of strongest pulsation during life was found to be, in eight cases, in the sixth intercostal space, and in six of these to the left of the nipple line, the extension being to from 1 inch to 2 inches toward the axilla. In five cases the impulse was in the fifth space, and in four of these it was external to the nipple-line. Therefore the impulse has been most frequently more remote from the sternum than it should have been in health. A fair consideration of the varying antecedent conditions will, I think, allow us to see that this sign must be liable to many perturbations. In the free, unhampered heart, the impulse indicates the position of the apex or of a point just above the apex of the left ventricle. But when, by reason of adhesions, the relations of the heart to the chest wall, and very often the shape of the chest wall itself, is changed, the correspondence is by no means maintained. The strongest impulse may be transferred to parts of the right ventricle, or to parts of the left ventricle other than the apex. Careful palpation has demonstrated for me, in several cases of adhesion, the existence of definite impulse extending some distance below and to the left of the strongest impulse, indicating that the actual apex was not represented by the strongest

impulse. We shall see later on that either hypertrophy or enlargement of the heart is very commonly associated with adhesions. And we may readily conceive that the relative date of adhesions and enlargement may vary considerably. For instance, a heart being fixed by adhesions in an early stage of inflammation, hypertrophy or dilatation may follow, when there will be little change of the position of impulse; or the hypertrophy or dilatation may precede adhesion, when the impulse will be moved downwards and outwards; and the lung clothing of the heart will vary according to the degree of extension of inflammation, from pericardium to pleura and lung, bringing in all sorts of confusion. On the whole, therefore, I am not disposed to attach to this sign the importance which has often been allotted to it, and can well understand that, among the authors who have judged it to be of importance, there should have been much variation, both in statement and in inference. This much only should I venture to claim for it, that where there are evidences of enlargement of the heart, and where the strongest impulse does not, in the absence of amplification of the lung, correspond with the actual apex as determined approximately by palpation, the indication is among those which favour the diagnosis of adhesion.

The difficulties surrounding the sign in question are aggravated by the next alteration of the impulse which we have to consider. The whole area of impulse is enlarged to a remarkable extent, to an extent conterminous, in a general way, with the extent of cardiac dulness.

The sign belongs, in fact, equally to effusions into the pericardium and to adhesions. In both it marks the free writing of the heart's movements on the wall of the chest when the lungs are pushed out of the way. Specifically, there are differences in the character of the movement, helping us to distinguish between effusion and adhesion. Although we shall discuss these more fully later on, we may at present recognise that, in effusion, the ripple is one of uniform expansion, in adhesion, one of complementary expansion and retraction; that, in adhesion, during the systole, the lower half of the sternum and generally the third and fourth cartilages and spaces, are retracted instead of being protruded as they are in

effusion, and that there may be a dimpling at or beside the true apex. The combination of movements specifically indicative of adhesion will be more minutely reviewed when we come to the head of "diastolic rebound." Mr. Milton's analysis of the thirteen cases in relation to this point shows that in two cases impulse was felt all over the left side of the chest in front; in two all over the cardiac area; in the rest it is described as "diffused," "wavy," "heaving," or "forcible," the last being particularly noted in three.

6. *Fixed position of impulse.*—We all know that in normal states of the thoracic viscera, the position of the apex-beat or strongest impulse varies according to posture in the first place, and according to the relative fulness or emptiness of the lungs in the next. The adhesion of the heart to the outer pericardium and of the latter to the chest wall of course abolishes these mobilities. At first sight, the indication afforded by immobility of the apex-beat in all postures, and in all stages of respiration, would appear to be among the most decisive of adhesion. Its decisiveness is, however, seriously qualified by difficulties of application. We have already seen that the area of impulse radiates many degrees beyond the normal limits. A first practical difficulty lies in the fact that the actual point of strongest impulse is but a part of a large area of pulsation instead of constituting the whole area, and is not easily determined by reason of the heaving movements around it. We start in our determination with imperfect definition of the point whose movements we wish to follow; consequently we have much difficulty in being sure whether the position of this point varies according to variation in the position of the patient.

Where, as in the normal condition of the chest, we can, so to speak, seize the impulse with a finger and accurately mark off a pulsating tract from a non-pulsating tract, it is a comparatively easy matter to follow the shiftings of the greatest projection. Here, however, we have to exercise our sense of touch with much greater refinement; and when, in various postures of the patient, and in variously adopted postures of the physician, the delicate difference has to be estimated, I must confess, for my own part, to some inadequacy of my senses, to an accurate determination. In many cases under

my observation during the last two years I have carefully investigated the use of this symptom as regards posture ; and, calling in many observers in succession to determine the position of the strongest impulse and its variations under different conditions, have failed to obtain any such unanimity of observation as could lead to even an approximately certain decision.

In regard to movements in the position of the apex-beat caused by stages of respiration, difficulties arise on the side of the patient. A patient in health can expand and contract his lungs at pleasure. He can hold his breath whenever required. A large proportion of the patients with whom we are concerned are in a state of permanent dyspnoea. For them to draw an unusually deep breath or to expire profoundly is not easy ; and to hold the breath at the end of a deep inspiration or expiration is a requirement which can rarely be fulfilled. Generally, too, their average breathing is accelerated. In application, I have occasionally been able to get good indications from this test. But in the majority of cases I have been baffled by the respiratory difficulties of the patient. See what the difficulties are. On the one hand the patient has to do all that he can do, by frequent and strenuous respiratory efforts, to secure enough oxygen for his life. On the other hand the index—the apex-beat is ill defined. The answers, therefore, which, from our knowledge of the physical signs rendered by the normal thorax ought to have been sharp and clear, come to us drowned in such a bubble of cardiac and respiratory difficulties as to remind us of the bewilderment of the Prince in the “Arabian Night” who was climbing the hill to reach the speaking bird, harassed by spirit voices around him to which he failed to turn a deaf ear.

I should not dare to say that we need despair of getting ultimate use from this indication. All I can say is that such use as I have been hitherto able to make of it has been less satisfactory than I could have wished.

7. *Fixed limits of area of cardiac dulness.*—It is well known to us that, when the thoracic viscera are free from inflammatory and other damage, the area of cardiac dulness is altered by the movements of respiration, chiefly on its upper and sinistral limits ; that in inspiration the lung encroaches

and throws back the line of dulness, that in expiration the dulness is extended. In all precise marking out of the area of cardiac dulness a certain importance is attached to the delimitation of the varying line in the extremes of respiratory movement. In the diagnosis of compound adhesion of the pericardium this delimitation has more than a common importance. As we have already seen, in compound adhesion on the upper and left margin of the heart, the area is very often affected by inflammation leading to adhesion in varying degrees, complicated, it may be, by consolidation of the thin edge of the lung. Such adhesions of course put an end to all variations in the area of dulness on this side. We owe the application of this test to that eminent authority Dr. C. J. B. Williams. At first sight such a sign should be of great value. But in actual observation serious qualifications present themselves. It is tolerably easy to demonstrate the existence of changes in the area when the chest is healthy. It is certainly difficult to demonstrate with certainty fixity of the area in adhesion, when, as in the case of the determination of impulse, respiration is seriously affected, and still more if the overlapping lung be consolidated. In face of quickened respiration, time intervenes to impede observation, and people who are breathing hard cannot hold the breath for a sufficient period, or at the right moment. Hence we find that in many cases when we might fairly expect to find help from this sign, we are unable to decide with certainty as to its existence. Now and then, at cost of much distress to the patient, the decision can be made. On the other hand, we may often find, in less serious cases, that the movement exists, and that therefore there is no adhesion on this aspect. If, as a positive sign, this is not readily available, it has a great value on the negative side and should be always carefully investigated. When, as above noted, the overlapping lung is affected as well as the pleura, we lose in one way, we gain in another. The result of the consolidation of the overlapping lung is an extension of the area of dulness to a higher level than would correspond merely to the heart and pericardium, and its shading or halo of diminished resonance. A dulness so extending to the second left costal cartilage, or even higher, yet falling short of the site of apex of the lung, and at the same time not varying with

respiratory movement, may often guide us in the diagnosis of pericardial adhesion. You will remember that a dulness at the second left costal cartilage may be an extension from above or from below. When this dulness is surmounted by resonance, and is conterminous with pericardial dulness, or is a part of it, the indication, taken together with others already stated, is in favour of pericardial adhesion. We ought generally to be able to eliminate error dependent on signs belonging to tubercular deposit in the upper part of the left lung. In fact, this is too elementary a matter to be now discussed.

8. *Epigastric pulsation.*—We come next to certain changes in epigastric pulsation and in the movements of intercostal spaces above and below the impulse, which are of first-rate importance in their bearing on the diagnosis at which we are aiming. When the front of the heart is bound with any degree of firmness to the back of the sternum and adjoining ribs, the form assumed by the organ during systole must obviously be very different from the form assumed by the unshackled heart.

To all appearance the movement no longer produces a more or less globular condition of contraction, but a contraction on the whole more horizontal than vertical. The effect is that, during each act of systole, the movements of the several parts of the præcordial area present in adhesion a marked disturbance of the harmonious agreement which they present in health. In typical health we see and feel, as you know, a projection of the apex against the wall of the chest, corresponding on the average to a square inch of surface. In the heart, hypertrophied in its left ventricle, yet unshackled, we find the area of impulse amplified, and we find the thrust over all the area coinciding with the thrust of the actual apex, or with the thrust of the centre of protrusion. In adhesion, this agreement of movement is disturbed.

It is often possible to recognise, by the eye, that the spaces above and below the impulse are, at the moment of the projection of the impulse, drawn in, instead of being pushed out. It is possible, again, in many cases, to see a corresponding retraction of the xiphoid cartilage at the moment of impulse. Cardiographic tracings bring this out in a legible way but are exceedingly difficult to obtain. I am indebted to my

late house physician, Dr. Green, for a simple yet very effective modification of an often-used means of magnifying the movements and demonstrating their direction. There is a kind of plaster made of thick felt, one side of which is covered with adhesive material. Discs of the size of a florin are cut out of this. To the non-adhesive side long straws are fixed at right angles by sealing-wax. Several of these having been prepared, are affixed to the wall of the chest at various points, say at the point of strongest impulse over spaces above it, and over the xiphoid. The movements of the light straws register, in a large and easily decipherable way, the relations of the movements of different parts at each successive movement.

Mr. Milton in his analysis states that in three cases systolic retraction of the spaces above the impulse was noticed; that in two there was noticed retraction of the lower end of the sternum and the xiphoid cartilage.

9. *Diastolic rebound.*—This expression needs some explanation. Picture to yourselves, in the first place, the outcome of adhesion of the heart to the wall of the chest in respect of the freedom of action of the organ or its capacity of doing its work. Think of the ventricle trying to follow the blood to complete extrusion, and yet held back by the grip of the chest wall. Think how much extra labour must be involved in the double duty, in the double resistance. We should reasonably expect that the hand applied to the wall of the chest would convey to the mind a sense of excessive toil. This certainly is, in cases of undoubted adhesion, vividly presented. But mere excess of exertion, as compared with result, is common to the condition we are investigating, with others tending to produce hypertrophy. In adhesion there is a certain proper order of laboured contraction characteristic enough to afford perhaps the best basis of actual diagnosis. In marked adhesion, during the process of systole, the relations which have been alluded to under the last paragraph extend to the lower half or third of the sternum and to the adjoining cartilages of the left side. During a systole, inordinately prolonged by the double resistance already alluded to, these parts are slowly and steadily drawn in, and subsequently, at the cessation of systole, suddenly recover their normal position. Under the touch of the hand, applied flat

over the heart region, there is an abnormally long period of painful indrawing of this area, followed by a sudden and somewhat violent rebound, marking the momentary assertion of the elasticity of the walls of the chest. This is what has been called the diastolic rebound, and, when careful training has allowed us to estimate it fully, is, taken by itself, one of the most important, perhaps *the* most important, of all the elements of diagnosis.

According to Mr. Milton, a diastolic rebound was noted in only two out of thirteen cases. It is probable that the symptom escaped notice in many of the other subjects.

10. *Murmurs*.—No one can say that endocardial murmurs can help us much, if at all, in the direct way. That they are included in the list of signs is made necessary by the fact that, in certain cases of adhesion, endocardial murmurs are heard during life, whereas subsequent post-mortem examination fails to show alterations of the valves or orifices.

It is almost certain that in such cases the distortion of the pulsating heart consequent upon adhesion interferes with the fitting of the valve-flaps to each other, and leads to leakage at the mitral orifice, or more rarely to aortic obstruction or insufficiency.

Now, the hearts in which we hear these murmurs, dependent on mechanical disarrangements as opposed to morbid changes of the valves, are found to be enlarged, hypertrophied, and often dilated on the left, dilated and perhaps hypertrophied on the right, and to assume a squarish form.

Much the same change of form is produced in non-adherent hearts by actual valve disease. The application of these points to diagnosis lies this way. We may be in doubt as to whether in a particular case a heart greatly enlarged, square-shaped, and impressing on the chest wall a large field of impulse, be only enlarged or be also adherent. We hear the murmurs of mitral regurgitation. With the evidence that we have been considering we are not at liberty to assume that the murmurs necessarily mark the existence of actual valvular disease. The murmurs are not decisive of organic affection of the valves, but may be an indirect outcome of adhesion, and the conclusion of this section is that, whereas valve disease is far more commonly met with than adhesion,

we may guard ourselves from error if, when we meet with symptoms favouring the opinion that adhesion has occurred, we remember that the murmurs, which might be indicative of valve disease, might, under the circumstances, indicate adhesion. The murmurs may mark either the one condition or the other; their value depends upon their associations, and the moral is that we must remember both possibilities, and bear in mind that the more commonly occurring conditions may be simulated by the rarer. (See second of subsequent cases.)

Altered size of the heart.—Taken alone, enlargement is of little, if any, value. Taken together with signs of immobility of the impulse and unvarying area of cardiac dulness, it may help to clinch a diagnosis, particularly where there are no indications of valve disease. But there are, in this view, so many possible causes of enlargement of the heart that we cannot make much use of the symptom. On the other hand, in a few cases a marked diminution in the size of the heart may be brought about by simple adhesion, where the adhesion happens to be associated with much thickness of inflammatory deposit. As a peri-hepatitis may, by contraction of inflammatory deposit, lead to diminution of the size of the liver, so may pericarditis lead to diminution of the size of the heart simply by compression. A diagnosis has, in fact, been made by use of this symptom.

As additional signs of adhesion we may quote two which seem to me worthy of consideration.

One of these has been already briefly noticed. It consists in a dimpling or pitting of the thoracic wall over or at the side of the true apex during systole. This can often be observed. According to most authorities the dimpling occurs only when the adhesion is compound, but an observer of the highest rank, Traube, has found it in a case where there was only intra-pericardial adhesion along the posterior wall of the pericardium. The symptom is also stated by other observers to have been present in cardiac disease without any adhesion whatever.

The other is called "Friedreich's sign," and consists in a sudden diastolic collapse of the cervical veins, related apparently with the diastolic rebound already discussed. It is

preceded by distension of the veins, and can be distinguished from venous pulse.

This ends our list of signs. Now for the process of sifting. We have gone over more than a dozen signs of adhesion. Let us try and decide for ourselves what signs and what groupings of signs are most decisive in diagnosis.

First we can see that, in most cases, the signs of adhesion and of effusion march, up to a certain point, together. We find, in both, increase of the area of cardiac dulness, most marked in the upward direction; in both, extension of the area of impulse, particularly in the upward direction. To trained observers slight differences here offer themselves. The form or outline of the dulness is more regular in effusion—more pear-shaped—showing two dilatations, an upper smaller, a lower larger, with a distinct intervening narrowing. The constriction is far less evident in adhesion, and the dulness is often much broader on the upper aspect. The extended pulsation in adhesion has not generally the same rippling movement from below upwards as is seen in effusion, and may be, on the one hand, more sudden, or, on the other hand, may be interrupted by retractions in the middle spaces. Sinking for the moment these minor and more delicate differences, we must admit that in a long-standing case of heart disease the two signs must direct our attention to the possibility of adhesion. They are definite stages in methodical diagnosis.

After these we turn to the altered movements of the chest-wall, particularly over the lower part of the cardiac area. We carefully look to the impulse and do our best to estimate if it correspond to the apex or to a point higher. We look for dimpling at the apex in systole when the impulse is higher. We look for retraction of the third or fourth or even higher spaces at the time of the impulse. Then we carefully examine the movements of the lower half of the sternum, the xiphoid, and the epigastrium. We may find the sternum retracted during systole and giving the diastolic rebound. This in cases of strong adhesion. In less-marked cases we can find that the xiphoid or the upper part of the epigastrium, or both, are retracted at the moment of systole. These are our strong points. Beyond them come the indications lying in fixed position of apex and immobility of the limit of cardiac

dulness in inspiration and expiration. I have pointed out the difficulties which beset the application of tests in these signs. Much here depends on the training of the observer, much on the state of the patient. If any trustworthy observation can be accomplished these may help in one of two ways, but for the most part they are, as we have seen before, more valuable in proving absence than in deciding presence of adhesion. You will have seen that the position of the greatest impulse cannot be of much use, save as compared with that of the true apex. Of the diastolic collapse of the veins in the neck I can say very little. The symptom certainly seems one which ought to occur. I have not had the good fortune to see it as yet in a marked form, but I shall certainly keep it in view in all cases where adhesion is thought of. Enlargement of the heart may, as we have seen, be generally expected, and murmurs are rarely absent. They make up a part of the picture, but they help in diagnosis only as part of the substratum, and are not decisive. In fact, as we have seen, a diminution in the area of the heart dulness may be brought about by simple adhesion, and murmurs may be brought about by either valve disease, most commonly a precedent of adhesion, or by distortion of the heart, accompanied by adhesion.

In our complete investigation of the condition we are endeavouring to diagnose there are some points which, offering themselves to our notice, are interesting, although, so far as can be seen, not in any way available. Thrill felt by palpation over the heart is one of these. Mr. Milton states that in the thirteen cases a systolic thrill was felt over the impulse in six, a pre-systolic thrill in three, in the remaining four none. Considering the large admixture of the signs of valvular disease with the signs of pericardial adhesion, I cannot at present say what importance may be attached to this symptom.

SECTION II.—CASES.

Since the above was written, two cases bearing on this subject have come under our observation in the wards. I cannot refrain from quoting them as illustrations of the

grounds upon which diagnosis of adhesion of the pericardium may be made.

CASE 1.—M. A. C—, a married woman, æt. 27, was admitted into Charity Ward on April 24th, 1888. She stated that she had had three attacks of acute rheumatism, and had been in hospital on five previous occasions. She had been married six years, had had one child which died when it was between four and five years old, had had another child which died at the age of six months, and had had two miscarriages, one before, one after the birth of the elder child. Beyond this there was no indication of the existence of specific disease. When she entered the hospital in April, 1888, she was pale, anxious-looking, blue in the lips, and greatly embarrassed in her breathing. Her temperature was 97·8°.

The record of her progress between April and October 16th, when she died, is very voluminous. I submit an abstract.

On inspection, the chest was seen to move as a whole, with very little expansion during inspiration. The cardiac area was distinctly projected. The strongest impulse was about an inch below the left nipple. Thence the impulse extended upward to the lower border of the second left costal cartilage. It was evident to the eye that at the time of the impulse the spaces at and above the level of the nipple (third and fourth) were drawn in; a similar drawing-in being visible just below the impulse. The application of the hand to the chest developed the indications. The extent of the impulse over the whole of the left side of the chest up to the second left cartilage was more fully brought out. A finger of one hand being placed on the fourth space, and a finger of the other hand on the point of strongest impulse below, the fingers could be seen, by the observers standing round, moving in alternation. So also when the space below the impulse was compared with the impulse. When, the observer standing on the right of the recumbent patient, the right hand was placed on the chest with the ball of the thumb over the junction of the gladius with the xiphoid, and the fingers extended across to the impulse, a strong wave was felt passing from right to left. At one moment a wave of ebb, as the lower part of the sternum receded and the impulse advanced. The next moment a wave of flood, as the sternum and xiphoid

swiftly sprang back to their normal level, and the dome of impulse collapsed. The movement of "diastolic rebound" was typically executed. And the whole series of movements were readily demonstrated to a class of students when one finger was placed on the xiphoid, another on the impulse.

The area of cardiac dulness was increased in all directions, —upwards to the second left costal cartilage, thence downwards and to the left to an inch outside the nipple, on the right to a finger's breadth beyond the right border of the sternum. The impulse could be seen and felt, it may be remarked, over all this area.

The foregoing observations made it clear to me that there was compound adhesion of the pericardium. To follow up accessory signs, I endeavoured repeatedly to make observations regarding mobility of the impulse, and variations of the limit of cardiac dulness in respiration. But I could not define either, although I availed myself of the help of many trained assistants.

One accessory sign, however, presented itself in the most vivid way, namely, the diastolic collapse of the jugular veins (Friedreich's sign). These could be seen dilated and turgidly prominent during systole, while with diastole they suddenly fell in and left no trace.

While this case was watched and studied for months in view of the diagnosis of pericardial adhesion, many other points of great interest were noted. There were present the signs of mitral obstruction and regurgitation, of aortic obstruction, of aortic incompetence, of nutmeg liver, of ascites limited in such a way as to offer by itself the opportunity of a special clinical lecture. A partial left hemiplegia appeared at one time, and passed away. Peritonitis supervened on several tappings. The fluid subsequently removed contained pus, and her death, after all, was more distinctly due to the abdominal than to the thoracic disease.

An abstract of the post-mortem record, made by my colleague Dr. Sharkey, is subjoined. It will be seen that the diagnosis was confirmed, and it will no doubt strike you that the large extent of surrounding pleural adhesions helped to throw the pericardial adhesion into stronger relief.

"Body of small, emaciated woman; no dropsy. Abdomen

distended, and on being incised it gave exit to a large quantity of thick pus, with blood-clots and fibrinous clots in it. The whole thickness of the abdominal wall except the skin was hard, infiltrated, and inflamed. After the peritoneal cavity was sponged out and the pus, &c., removed, the intestines were found generally adherent and forming a small central mass in front of the vertebral column. The abdominal wall was adherent by old adhesions to the surface of the liver.

“All the thoracic organs, too, were similarly united. Both pleural cavities were almost entirely obliterated by firm adhesions. The lungs were united firmly to the parietal layer of the pericardium, and the latter was united to the visceral and that to the thoracic wall. One or two calcareous masses, about as large as a marble, were attached to the visceral pericardium.

“*Heart.*—The heart was generally hypertrophied and dilated, the right side more than the left. The aortic valves were generally thickened and distorted, and *very slow* regurgitation took place through them. The mitral orifice was much reduced in size and slit-like; it admitted of free regurgitation. The mitral curtains were very thick, hard, and rigid, and the chordæ tendineæ were in the same condition, and very much shortened. The pulmonary and tricuspid valves were evenly and slightly thickened. Both auricles were much dilated. The endocardium of the left was very thick, atheromatous, and had a number of small calcareous plates in it.

“*Lungs* were pale and very œdematous.

“*Liver* was in a typical nutmeg condition.

“*Kidneys* pale, firm, œdematous; capsules somewhat adherent; and small irregularities were present on the surface of the cortex after its removal.

“*Spleen* firm.

“*Brain* very pale and shrunken, but generally so; much subarachnoid fluid. Careful examination revealed no evidence of local disease, such as softening, hæmorrhage, or thrombosis, with the exception of one very limited area on the temporo-sphenoidal lip of the right Sylvian fissure. Here at one spot was slight, superficial, yellow discolouration.”

The other case to which I would refer was, when the fore-

going lines were written, still under observation. The patient was a woman, *æt.* 24. She presented the signs of mitral obstruction and regurgitation, of aortic obstruction and regurgitation, of tricuspid regurgitation, and, with the exception of the diastolic collapse of the veins of the neck, she presented all the signs of pericardial adhesion recorded in the preceding abstract.

I subjoin the notes of her case kindly abstracted for me by my admirable house physician, Dr. Luard.

“M. J—, *æt.* 24, ironer, single, admitted May 28th, 1888.

“*Family history* good, except that one sister died of phthisis.

“*Previous history*.—Had smallpox at 11, ‘rheumatism’ for first time at 15 (in bed three weeks), second attack rheumatism at 22, in 1886 in Christian Ward under Dr. Stone (six weeks), again under Dr. Stone at 23 in 1887 (four weeks). Catamenia have ceased some time.

“*Present illness*.—Has complained of pain in region of heart, epigastrium, and between shoulders, and in the thighs, with shortness of breath, palpitation, and occasional faintness and attacks of vomiting, with loss of appetite. She also suffers from orthopnoea, especially at night.

“*On admission*.—An anæmic woman, complaining of shortness of breath and palpitation. Temp. normal. Pulse 100, regurgitant.

“*Tongue* clean.

“*Chest*.—Resonance good, but there are rhonchi over both lungs before and behind.

“The *heart* dulness begins above at the second rib, and extends to the right of the middle line.

“The impulse is most strongly felt in the sixth interspace, just outside the left nipple line. It is diffuse, and wavy, and of considerable force. It extends over the whole area of dulness. At the time of the impulse the third and fourth intercostal spaces, just within the nipple line, are retracted; and there is a slighter retraction in the seventh space. At the time of impulse, the lower end of the sternum and upper part of the epigastrium are strongly retracted; after the impulse they are sharply thrown forward. The hand placed on the lower part of the chest feels a succession of waves of movement passing from right to left, the part of the chest about

the impulse being drawn up during systole into a sort of dome-shaped projection while the parts in the median line are depressed.

“There is a presystolic thrill at the apex; here is heard a rather rough murmur running up to the first sound, followed by a blowing murmur, conducted into the axilla.

“The second sound is accentuated over the pulmonary area; in the aortic area there is a systolic murmur conducted into the neck, and a diastolic murmur heard all down the sternum.

“*Abdomen* rather distended, with signs of a small amount of fluid effusion.

“*Liver*, dulness from sixth rib; edge is felt almost as far down as the umbilicus, and is tender.

“*Spleen* not felt.

“*Urine* 1020; clear, acid, contains a good trace of albumen; no sugar; some squamous epithelium and mucus; no casts.

“There is œdema of feet and legs.

“There is no diastolic emptying of cervical veins. The estimation of the mobility of the impulse, and of the movement of the lung over the heart during the changes of the lung in respiration, cannot be made.”

Progress, as reported by Dr. Luard, Nov., 1888.

“Since her admission six months ago, patient has not made any great advance or decline, but on the whole has been gradually getting worse.

“Three weeks after admission the abdomen became so tense, and the breathing so rapid and embarrassed that it became necessary to tap her, and since then she has been tapped eight times at intervals of two or three weeks.

“The *abdomen* each time gradually becomes much distended, though without much dulness in the flanks; and from a pint and a half to five pints of clear ascitic fluid are drawn off each time; this being followed by temporary relief.

“The *breathing* is always rapid, though more distressed when the abdomen is full; and more or less sonorous rhonchus is generally to be heard over the lungs. There is not much cough, and little expectoration. There have been at times signs of slight effusion into base of right pleura.

“The *urine* has generally been clear, sp. gr. about 1020, with usually slight trace of albumen.

“The *legs and feet* are now mottled in colour, and have become more swollen and œdematous.

“The *amount of urine* passed during the first three months averaged over forty ounces, being increased during the days following each tapping.

“During the last three months the amount has been lessening, now averaging little more than twenty ounces.

“The *pulse* has remained fairly regular, but weak, averaging about 100 per minute for the first two months; under the use of digitalis in large doses it declined to 60 or 70 for some weeks; lately, under strophanthus, it has averaged 70 to 85, and is now weaker and more irregular.

“The *cardiac signs* remain much as before, except that the aortic murmurs are now difficult to hear, on account of the loudness of the mitral murmurs, the signs of adherent pericardium remaining well marked.

“She suffers much from pains, both in the back and in the abdomen, especially on the left side, and from precordial pain, with great shortness of breath; and her appetite is poor and capricious, with occasional vomiting.”

She died a day or two after I received the abstract. At the post-mortem examination the pericardium was found to be strongly adherent over a large area, and on further dissection was found to be equally strongly attached to all parts having contact with it. There was complete adhesion between the two layers of the pericardium. The heart was greatly enlarged, partly by hypertrophy, partly by dilatation of its several cavities. The aortic and mitral valves were much less diseased than might have been expected from the murmurs heard. The post-mortem examination was limited, by injunction of the patient's friends, to examination of the heart. I may observe that, in both of the cases here related, the diagnosis of adhesion of the pericardium was made during life on the basis of the considerations set forth in the main part of this paper. It is interesting in the second case to note the remarkable disproportion between the indications of valve disease afforded by the murmurs heard over the heart during life and the amount of structural changes found afterwards.

It can hardly be doubted that the adhesion producing changes in the form of the heart made great addition to the effects of the valve disease.

A NOTICE
OF THE MORE INTERESTING OF THE
SPECIMENS ADDED TO THE MUSEUM
DURING THE PAST YEAR.

By SAMUEL G. SHATTOCK,
CURATOR OF THE MUSEUM.

*The Right Half of a Larynx removed for Carcinoma, with a
Carcinomatous Insula on the Left Vocal Cord.*

THE patient, a gentleman æt. 57, consulted Dr. Semon in October, 1887, for hoarseness, which had commenced about six months previously without any known cause, had increased gradually, and led to nearly complete aphonia. There was no pain, no dysphagia, no cachexia, no emaciation. Laryngoscopic examination showed that the whole of the right half of the larynx, except the epiglottis, was converted into an immovable, red, infiltrating mass, from which only a small portion of the thickened and immovable vocal cord projected. There was no history and no sign of syphilis.

Iodide of potassium failed to produce any amelioration.

On November 1st partial exploration of the larynx was performed by Sir William Mac Cormac. Tracheotomy was first performed, the thyroid isthmus being split between two ligatures. The trachea was opened, and Hahn's compressed

sponge cannula inserted. After ten minutes (allowed to give time for the sponge to swell) the thyroid cartilage, which was ossified, was divided in the middle line with a small saw, and the halves of the larynx turned apart. Dr. Semon's electric lamp was now introduced into the larynx, when, in addition to the main mass on the right side, a small hard lump was observed in the anterior commissure. The posterior wall of the larynx was involved. Little hæmorrhage attended the removal of the right half of the larynx. When the lamp was now again introduced it was observed that on the lower surface of the left vocal cord in front, but not continuous with the mass in the anterior commissure, there was an isolated infiltration of the size of a split pea, not adherent to the cartilage; this was removed by a circular incision in the healthy parts around it. The patient died about forty-eight hours afterwards, apparently from septic pneumonia, no post-mortem being obtainable.

Microscopic examination shows the growth to be an epithelioma in the sense that it has arisen in connection with investing epithelium, as distinguished from glandular carcinoma. Whether the isolated growth on the left cord is due to contact or to metastasis is an open question. As bearing on the question of carcinoma communicated by contact, Professor von Bergmann has related a case in which there was carcinomatous disease on exactly opposite spots on the upper and lower lips.

Intratracheal Carcinoma continuous with Carcinoma of the Thyroid.

A man, æt. 39, was admitted on July 8th, 1887, under the care of Dr. Ord, Dr. Sharkey subsequently taking charge of the case in Dr. Ord's absence.

Ten months ago the patient had very severe attacks of hæmoptysis. On admission, the voice was reduced to a whisper; there were occasional paroxysms of dyspnoea. Laryngoscopic examination by Dr. Semon showed the right cord to be fixed near the middle line; ulceration of the anterior wall of the trachea corresponding to the projection outside about the third to the fifth ring of the trachea.

On August 10th Dr. Sharkey made the following note:—
 “On auscultation the air is found to enter poorly into both lungs, but hardly at all into the left. There is no definite evidence of lung disease. . . . No laryngeal disease.”
 Death occurred on August 22nd.

Post-mortem.—Into the trachea, about 1·5 cm. below the lower border of the cricoid, there projects a smooth, ovoidal growth, 2 cm. in its longer vertical diameter. On carrying a section through the tumour and tracheal wall into the circumjacent part of the thyroid gland, the morbid growth is seen to be continuous, with a widespread extension of similar substance beneath the tracheal mucous membrane. The tumour substance spreads between the tracheal cartilages into the thyroid gland. Histological examination shows the tumour to be of thyroid origin. The portion projecting within the trachea is largely columnar celled, but it has in places a cubical-celled lining. There is everywhere a lumen to the cell groups, and the epithelium is set in a single layer on the connective-tissue stroma.

Clinically the presence of malignant disease of the trachea was judged as possible by Dr. Sharkey during the last month of the patient's life.

Pathologically, when malignant disease commencing in the œsophagus or thyroid gland invades the trachea, there is usually an ulcerating infiltration only. Cylindrical-celled carcinoma is, moreover, a rare form of thyroid tumour.

Lymphadenoma in which the Intestinal Glands were extensively affected.

From a man, æt. 54, under the care of Dr. Bristowe for some months during 1886 and 1887. He was found to have a hard movable tumour in the abdomen below the umbilicus, signs of effusion into each pleural cavity and into the abdomen; some of the superficial glands were slightly enlarged.

Post-mortem.—The abdominal tumour, weighing nearly 14 lbs., was found to involve the mesenteric and retro-peritoneal glands. The iliac, inguinal, cervical, and axillary glands were also affected. There were, besides, small white nodules in the spleen, apparently diseased Malpighian bodies.

All the intestinal glands, solitary and agminated, from the duodenum to the rectum, were much enlarged, elevated, and firm; the enlargement was particularly marked in Peyer's patches. The growth was strictly limited to the glands, and there was no ulceration. Microscopic examination showed hyperplasia of the lymphatic tissue.

Intestinal Concretions.

Nineteen distinct calculi, varying in size from that of a large cherry to that of an orange pip. They were found in the large intestine, chiefly in the transverse colon. The mucous membrane had been extensively ulcerated by the calculi, which lay in pouches. Chemical analysis by Dr. Bernays showed: Tricalcium phosphate, 67·65; calcium carbonate, 1·22; nitrogenous matter, 23·47; moisture, 7·41.

The patient was a girl *æt.* 7, who had suffered for several months from chronic diarrhœa dependent on intestinal catarrh. She was treated during most of this time with chalk in various forms and bismuth.

Imperforate Bladder in a Fœtus of about the Fourth Month.

The abdomen is much distended, and an incision into it reveals a large, smoothly-walled space occupying the pelvic cavity, and apparently that of the whole abdomen. The simplicity of its interior is broken only by the presence of two paired openings in its posterior lower part. These openings are the orifices of the ureters, and the large cavity into which they open, the distended urinary bladder. The bladder is imperforate at the cervix.

The condition might be one acquired during fœtal life, or it might be an original defect. There is plain evidence adducible that diminution or closure of canals occurs at times during the process of development from secondary changes, setting aside the considerable class of cases in which the obliteration occurs as a normal event. The complete closure, for example, of the duodenum at times observed in the fœtus

cannot be explained except as a secondary abnormal occurrence in the developmental process. In the specimens under notice, however, the imperforate condition is most probably primary or original rather than secondary in its nature, and it may be looked upon as the counterpart of that which constitutes imperforate rectum. It is clear, on a moment's reflection, that if the hind gut and the urogenital sinus be continuous in the manner and degree they normally should, when the cloacal depression from the surface lays open one, it will lay open also the other into a common space. Nevertheless, there are cases of imperforate bladder combined with imperforate rectum, and cases (such as the present) of imperforate bladder combined with perforate rectum. And it must probably be assumed that in either class of case the original continuity between the gut and the urogenital sinus has been partially or completely closed, or has been from the first unduly small or unnaturally placed, before the parts are reached by the cloacal depression, and that either the gut or the sinus may be opened without the other.

It may be pointed out that such cases of distension of the bladder prove the intra-uterine secretion of urine in a way that admits of no doubt.

A Rare Form of Pedunculated Body in the Knee-joint.

The knee-joint was obtained from a dissecting-room subject. Projecting into the joint on the right side, and immediately below the patella, is a discoidal body 4 cm. in the transverse diameter, 3·2 cm. in the vertical, ·7 cm. in thickness. It is invested with a thin capsule of connective tissue continued into a falciform synovial fold on the right side, which fold is lost by the adjacent border of the patella in the general synovial membrane. The body lies immediately below the patella, passing a little way beyond the middle line to the left side. At first sight it appeared to be a local overgrowth of the fat which is naturally present in the synovial fold of the alar ligament.

There is an excellent example of such a lipoma growing in this situation in the Museum of St. Bartholomew's (No. 716),

and Mr. Barwell states ('International Encyclopædia of Surgery,' vol. iv, "Diseases of Joints") that he has removed an intra-articular lipoma from each side of the patella. Vertical section shows, however, that the body in question is a blood-clot resulting from hæmorrhage into the alar ligament, arising, doubtless, from a contusion or similar injury, the result either of external violence or of injury sustained by the fold during some unusual movement of the joint.

Villous Carcinoma of the Breast.

The specimen was removed from an unmarried lady, æt. 53. She had been conscious of a lump in her breast for three months before seeking advice.

As soon as the growth was cut into after the removal of the breast it was apparent that the growth was of an exceptional character.

Microscopic examination shows the tumour to have an imperfect wall or capsule of fibrous tissue, from which arise branching processes very thickly invested with actively growing epithelium of the columnar type.

R E P O R T
 OF THE
 DEPARTMENT FOR DISEASES OF THE SKIN,
 1887.

BY J. F. PAYNE, M.D.,
 AND
 WILLIAM ANDERSON, F.R.C.S.

NOTES BY MR. ANDERSON.

Eczema.—The total number of cases of this disease was 171, of which 83 were males, 88 females. In 35 cases the patients (M. 17, F. 18) were under seven years of age.

The cases tabulated according to decades are as follows :

	Number.	Males.	Females.
Age under 10 . . .	43	18	25
Between 10 and 20 .	28	16	12
„ 20 and 30 .	24	12	12
„ 30 and 40 .	12	7	5
„ 40 and 50 .	21	9	12
„ 50 and 60 .	21	3	18
„ 60 and 70 .	20	16	4
Over 70 . . .	2	2	0

A history of gout was noted in five cases only and a history of rheumatism in only two cases; dyspepsia was, however, associated with the eczema in some degree in nearly all the patients, and in 17 (M. 6, F. 11) the digestive disturbances were strongly marked.

Alopecia areata.—The examples of this complaint were for the most part of the usual type, but in two instances the history pointed in the direction of contagion, other members of the family being similarly affected at the same time. Neuralgic pains were present in about one fourth of the cases, but bore no relation in seat to the denuded areas, nor did these areas in any instance coincide with the territory of any particular nerve.

Lupus erythematosus.—In two cases the disease at the time of admission had attained an advanced stage. The patients, both females, were respectively forty-two and fifty-two years of age, and the duration of the disease in the first four years, in the second three years. The eruption assumed the “butterfly” form upon the face in both, and in the elder a second patch was present upon the buttock. Erasion, followed by the application of caustic potash, was successful in producing a permanent destruction of nearly the whole of the morbid tissue in the younger patient, but in the elder a marked improvement was followed by a relapse, the disease spreading again over the whole area of operation, and assuming characters almost identical with those of lupus vulgaris. No tubercle bacilli could be found in sections of the affected tissue in either case.

Psoriasis.—The cases offer few points of special interest. Almost all the patients appeared to enjoy good general health. In one case of twenty years' duration, involving nearly the whole body, and previously unaffected by treatment, the inunction of pure vaseline was rapidly followed by a complete disappearance of the eruption. The application was for the first two weeks confined to a single limb, and during the time the improvement was limited to this portion of the surface.

WILLIAM ANDERSON.

No.	Disease.	Jan.		Feb.		March		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	Acne vulgaris	1	...	2	2	2	1	1	2	1	1	10	4	
2	" rosacea . . . . .	...	...	4	1	1	...	1	1	...	...	3	...	...	...	...	...	...	...	...	...	...	...	2	9
3	Alopecia areata	5	2	3	3	2	1	1	2	3	1	3	1	3	1	3	1	1	2	1	1	...	...	22	15
4	Cheirpompholyx . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	1
5	Ecthyma . . . . .	...	...	1	...	...	2	1	...	...	...	1	...	...	...	...	...	...	2	...	...	3	...	7	3
6	Eczema	7	10	9	5	1	9	6	1	6	3	6	4	1	1	1	3	8	1	2	7	4	4	9	8	1	
7	Erythema multiforme . . . . .	...	...	...	...	1	1	1	1	1	...	...	...	...	...	...	1	1	3	...	...	1	1	7	3
8	" vesicans . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	1
9	Febricula (circinate eruption) . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	1
10	Furunculul . . . . .	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	0
11	Herpes labialis . . . . .	...	1	...	...	...	...	...	...	1	1	1	1	1	1	1	...	1	1	...	1	...	3	2	
12	" zoster . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4
13	Hydroa . . . . .	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	...	...	...	...	...	...	2	1	
14	Hyperidrosis . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0
15	Ichthyosis . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0
16	Impetigo contagiosa	2	2	2	2	4	3	4	2	5	2	5	4	1	4	1	4	1	2	1	2	1	1	25	23		
17	Keratosis pilaris . . . . .	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	0	1
18	Kerion	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
19	Lichen circinatus . . . . .	...	...	2	2	1	...	2	1	1	1	1	1	1	1	1	...	...	...	...	...	...	6	1	
20	" planus . . . . .	...	...	...	...	1	...	1	1	1	1	1	1	1	1	1	...	...	...	...	...	...	1	2	
21	" scrofulosorum . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	0
22	" urticatus . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	2	3
23	Lupus vulgaris . . . . .	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	
24	" erythematous . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	2
25	Miliaria . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	0	1
26	Onychia . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	1
27	Papillomata . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0
28	Papillomatosa . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0
29	Pemphigus	1	...	...	...	1	1	1	1	1	1	1	2	1	3	3	2	1	1	2	1	3	1	1	9
30	Pigmentation	1	1	0	

No.	Disease.	Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total.			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
31	Pityriasis rosea	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
32	" rubra	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..
33	Prurigo	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
34	Pruritus	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
35	Psoriasis	2	3	3	4	6	3	5	2	3	3	4	2	3	4	2	3	..	..	..	..	..	..	..	..	..	..	..
36	Purpura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
37	Rodent ulcer	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
38	Scabies	3	3	3	1	1	3	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
39	Scrofuloderma	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
40	Sebaceous cysts	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
41	Seborrhoea sicca	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
42	Sudamina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
43	Sycosis	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
44	Syphilis (acquired)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
45	" (congenital)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
46	Tinea circinata	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
47	" tonsurans	6	3	6	1	6	4	2	3	5	7	7	4	4	2	..	..	..	..	..	..	..	..	..	..	..	..	..
48	" sycosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
49	" unguinum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
50	" versicolor	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
51	Trigeminal neurosis	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
52	Urticaria	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
53	Xanthelasma palpebrarum	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
54	Xeroderma	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
55	? Arsenical eruption	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
56	Iodide of potassium eruption	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Monthly totals		32	28	30	25	32	37	29	24	34	27	41	27	32	28	32	30	36	24	29	18	29	27	20	25	376	320	320	

Grand total . . . 696.

Males. . . 376

Females. . . 320.

1887.—Total . . . 696.

The reporters desire to thank Mr. H. A. Sansom for his kind assistance in the preparation of the statistical matter.

NOTES ON LICHEN CIRCUMSCRIPTUS, VEL
CIRCINATUS (*Seborrhœa corporis*).

By J. F. PAYNE, M.D.

ALTHOUGH I have in former years drawn attention to this eruption, I should like to say a few words about it again, since it has lately been the occasion of some controversy.

The name given above, which (or something like it) has been applied to this somewhat insignificant skin disease, since the time of Willan in 1808, is generally admitted to be unsuitable, since its resemblance to the diseases more properly called lichen is very slight. Hence other names have been proposed. Several American dermatologists have described what is evidently the same affection under the name of *Seborrhœa corporis*, which has been adopted in this country by Drs. Colcott Fox and Liveing. Again, Dr. Unna, of Hamburg, has published in the 'American Journal of Cutaneous Diseases' (December, 1887), an unmistakable figure of the same disease with the appellation *Eczema seborrhoicum*. The reader will think perhaps that the confusion of dermatological nomenclature could hardly go further, but I must myself plead guilty to having suggested another name, intended to be neutral, and to imply no theory as to the nature of the disease, viz. "*Circinaria*." However, this has not met with much approval, and I now agree with those who regard the affection as essentially one of the sebaceous glands. If this be so, the name *Seborrhœa*, though not perfectly descriptive, since there is something more than mere excess of secretion of sebum, seems on the whole the most convenient.

The reasons for regarding this eruption as a form of seborrhœa, or at all events as sebaceous, are twofold:

1. The small papules which are the starting-point of the affection are, when carefully traced, found to arise from sebaceous glands, and the scaly patches which are subsequently found are always greasy.

2. The skin eruption is often associated with seborrhœa of the scalp.

With regard to the papules, I should like to draw attention to one point which has not been generally noticed. They are at first of a bright red colour, and at a certain stage of development they readily bleed if the scales are lightly removed. The same thing is true of the bright red margin of the larger patches, which, when the scales are removed, often show small hæmorrhagic points, much as in psoriasis. The bright colour of these parts is rather suggestive of hæmorrhage than of mere hyperæmia, and I have often seen red blood-discs in the scales on microscopical examination. These facts clearly show that there is not only excessive secretion and enlargement of the sebaceous glands, but dilatation of blood-vessels, which project above the ordinary level of the skin—a condition not met with in eczema.

From these papules the affection spreads centrifugally, and several may be fused together till a discoid patch is produced, which may be regarded as the second stage of the disease. Next, the centre of the patch may heal while it spreads at the margin, and thus a ring, complete or broken, may result, the margin of which is formed of red papules and scales, while the central area is smooth and of a characteristic yellowish or fawn colour. Sometimes a large area of irregular shape in the interscapular region is produced. Even when this is not present, the distribution of the patches often suggests that they have been formed by outward extension from a centre.

The second point in favour of a sebaceous origin for the disease, its connection with seborrhœa of the scalp, is noted in three of the seven cases here recorded. I think it might have been found in others if this point had been more carefully attended to; but certainly in some cases there was nothing noticeable in the scalp. The affection of the head is generally of older date than that of the trunk, and the morbid process appears to pass from the head to the sternal and interscapular regions without necessarily affecting any intermediate part. Hence the scalp affection may have run its course and subsided, while that of the skin remains. In one case ringed patches were seen on the head resembling those of the trunk.

On these grounds the affection may be regarded as sebaceous, but whether we should call it, with Dr. Unna, *eczema seborrhoicum*, is another question. According to Unna the erup-

tion here described is only one phase of a general skin disease to which he gives this name. It is described as beginning on the head in the form of seborrhœa, which leads to eczema, or may end in pityriasis or dandriff. From the head it extends to the ears and neck, and so on to the trunk, where it assumes the form figured in his plate, which is identical with our lichen circumscriptus. It afterwards spontaneously develops into moist ordinary eczema, especially affecting the flexures. This disease he describes as occurring at all ages, even in infancy. It may last a long time; and if cured is likely to recur unless the seborrhœa or pityriasis of the head is cured.

Whether Unna's conclusions are likely to be accepted I will not undertake to say, but I cannot myself agree with them for the following reasons:

1. The coincidence of the affection now spoken of with what we generally call eczema is comparatively rare. Most cases never show any of the ordinary eczematous symptoms, and may last even for years without any such complication.

2. The form of eczema described by Dr. Unna, so far as I can recognise it, may occur entirely without these sebaceous patches on the trunk. It is spoken of by Unna as one of the regular forms of infantile eczema, and the affection now spoken of rarely, if ever, occurs in children.

3. The results of treatment are very different. This disease is healed much more rapidly than eczema, and with great certainty, either by some mercurial ointment, or by zinc ointment with carbolic acid, or probably with equal ease by borax and glycerine (as recommended by Dr. Radcliffe Crocker), provided the skin be well washed with soap and water, and the underclothing be changed.

4. I still adhere to previous statements as to the close connection of this affection with the wearing of warm woollen clothing, especially flannel; which has led to its being called the "flannel rash."

The following Table shows the main points of the seven cases, with five others which have come under my notice in other departments of the hospital or elsewhere. It will be seen that in only one case, No. 12, was there no flannel worn. Another peculiarity in this case was that the eruption had spread over the whole body in a fortnight (at least this was

alleged), which is unlike the usually slow progress of seborrhœa corporis, and suggests the possibility of its having been really a different affection, *e. g.* pityriasis rosea, the diagnosis of which from seborrhœa corporis is undoubtedly difficult, but cannot be discussed here. Case No. 4 was similar in the rapidity of its course.

These cases, I should say, are all distinct from those quoted in the Report of this Department for 1884 ('St. Thomas's Hospital Reports,' vol. xiv, p. 229).

J. F. PAYNE.

Cases of *Seborrhœa Corporis*.

No.	Name.	Age.	Site of eruption.	Characters.	Clothing.	Complications.	Duration.	Result.
1	William M.	48	Back, chest, abdomen	Red papules and rings with yellow areas; itching	Flannel day and night	Extensive pityriasis of scalp with falling of hair; dyspepsia; rheumatic fever	9 months	Much better after 14 days, and ceased to attend.
2	Frank U.	31	Back, chest, scalp	Scaly patches with raised margin; itching	Woollen vest by day, flannel at night	Pityriasis of scalp, with falling of hair; also limited patches on scalp like those on body	1 month; also 1 year ago	Attended once only.
3	Henry W.	6½	Chest	Red papules with scales, up to $\frac{1}{8}$ inch in diameter; starting from sebaceous glands	Flannel day and night	Said to have had similar spots on head	3 months	Attended once only.
4	James G.	23	Chest, neck, back, right groin, and arms	Red papules and rings of papules, some scaly, some smooth; on neck and arms continuous discoid scaly patches	Flannel day and night	None	3 weeks	Much improved in 14 days; finally cured in 2 months. (An unusually obstinate case.)
5	William M.	22	Chest and back	Characteristic patches	Flannel day and night	None	Unknown; supposed since childhood	Attended once only.
6	John B.	5½	Chest, neck, back, scrotum, and groins	Sebaceous papules and scaly patches on chest and back; on chest eczematous; on scrotum and groins moist eczema, surrounded by papules	Not noted	Eczema; formerly rheumatism	1 month or more	Soon ceased to attend.

No.	Name.	Age.	Site of eruption.	Characters.	Clothing.	Complications.	Duration.	Result.
7	Harriet K.	27	Chest, back, head	Large, reddish-yellow patches on chest and back, with circinate outline formed by line of small papules with branny desquamation; central area yellow than margin, and flat; thick seborrhœic crusts running into eczema on scalp; itching	Flannel day and night	Seborrhœa and eczema of scalp	Seborrhœa 6 years	Skin well in 4 weeks; head scurfy.
8	Henry R.	19	Chest and back	Papules with discoid and circinate patches; hæmorrhagic points on scratching	Flannel day and night	Pleurisy; head free from scurf; acne of face	Not noted	Seen once only.
9	Mary C.	27	Chest and back	Characteristic patches	Flannel day and night	Medical out-patient	Not noted	Cured in 1 week.
10	George Y.	26	Chest, back, and shoulders	Papules, scaly patches, and rings	Flannel day and night	Scurfy condition (pityriasis) of scalp; no eczema	1 year	—
11	James H.	32	Chest	Discoid patches which, when scales removed, show hæmorrhagic spots	No flannel now; but wore flannel belt day and night for many years	Lumbago	Several years	Seen once only.
12	Emily R.	19, married	Chest, back, thighs, arms	Ringed patches, with scaly margin and yellowish central area	No flannel worn; skin dirty	None	14 days	Seen once only.

REPORT OF
 THE MIDWIFERY DEPARTMENT
 FOR 1887.

BY ROBERT CORY, M.A., M.D., F.R.C.P.

THE RESIDENT ACCOUCHEURS FOR THE YEAR WERE MESSRS. GODFREY,
 MACEVOY, SOLLY, AND BOND.

FROM the 1st of January, 1887, to the 31st of December, 1887 (both dates inclusive), 2116 women were attended. Of these, 2088 resulted in single births, and 28 in twin births. There were 13 cases of abortion among the single births, and 1 among the twins.

In the following table the presentations of the children are classified:

	Among the single births.	Among the twin births.	Total.
Vertex	2003	43	2046
Breech	35	9	44
Superior extremities, including the shoulder	5	2	7
Head and arm	2	0	2
Inferior extremities	9	0	9
Face	3	0	3
Abortions and premature births	31	2	33
	<hr style="width: 50px; margin: 0 auto;"/> 2088	<hr style="width: 50px; margin: 0 auto;"/> 56	<hr style="width: 50px; margin: 0 auto;"/> 2144

Of the 2116 cases attended,

312 were 1st confinements.	57 were 10th confinements.
321 „ 2nd „	19 „ 11th „
310 „ 3rd „	29 „ 12th „
273 „ 4th „	5 „ 13th „
219 „ 5th „	9 „ 14th „
186 „ 6th „	4 „ 15th „
170 „ 7th „	2 „ 16th „
118 „ 8th „	1 „ 17th „
81 „ 9th „	<u>2116</u>

The following table shows the number of women confined at each consecutive year of life; the youngest mother was 17, and the oldest 47 years of age:

At the age of	No. of women confined.	At the age of	No. of women confined
17	3	33	77
18	17	34	88
19	38	35	65
20	73	36	82
21	108	37	54
22	120	38	65
23	147	39	46
24	133	40	36
25	129	41	19
26	161	42	16
27	129	43	11
28	103	44	5
29	87	45	4
30	126	46	1
31	85	47	1
32	87		<u>2116</u>

The FORCEPS were used in 44 cases. The reasons given for their use may be tabulated as follows:

Delay during 1st stage of labour	8	{ 4 contracted pelves. 4 occipito-posterior.
Delay during 2nd stage of labour	35	{ 20 tedious primipara. 13 inertia. 2 not stated.
Other reasons	1	1 placenta prævia.

There were 24 cases of primiparæ among the 44 forceps cases. This gives a percentage of 54.5. Rupture of the peri-

neum is reported to have taken place in 2 cases among the 44 cases.

PLACENTA PRÆVIA.

Four cases of placenta prævia are reported as having occurred during the year.

No.	Age.	Confinement.	Sex of child.	Treatment.	Result to Mother.	Result to Child.	
611	22	1st	M.	Separation of placenta; forceps	Recovered	Living	Complete.
*1836	39	12th	F.	Separation of placenta; version	„	Stillborn	—
*2618	24	6th	M.	Separation of placenta	„	Living	Partial.
2150	23	3rd	F.	Barnes' bags	Died $\frac{3}{4}$ of an hour after the birth	Died 2 days old	—

* These were transverse presentations.

The BREECH presented in 35 cases among the single births, which gives a proportion of 1 in every 60·3 births. In 12 of these cases the children were stillborn, which is equivalent to a deathrate of 34·3 per cent. among the infants.

There were 3 cases of craniotomy during the year. The following table gives the particulars :

No.	Age.	Confinement.	Reason for operation.	Result to mother.
1986	30	4th	Rachitic pelvis	Recovered.
2283	23	1st	„	„
768	28	1st	„	„

Four cases of maternal deaths occurred during the year. The following table gives particulars :

No.	Age.	Confinement.	Sex of child.	Result to child.	Interval between birth of child and death.	Causes.
2150	23	3rd	F.	Living	$\frac{3}{4}$ of an hour	Placenta prævia; hæmorrhage.
2425	24	1st	M.	„	5th day	Septicæmia.
2291	21	1st	M.	„	3 days	Sudden death.

This gives a deathrate of $\cdot 14$ per cent.

OF THE CHILDREN.—The number of children born among the 2116 women attended during the year was 2145; there being 28 cases of twin births. The sex of 1998 cases among them were: 1071 males, and 927 females. The sex of 147 is doubtful.

There were 91 stillbirths, or 1 in 23·2 labours, *i. e.* 4·3 per cent.

The characters of the labours in which the stillbirths occurred are given below :

Natural labours, including cases of intra-uterine maceration	29
Abortions	15
Premature	10
Breech	16
Craniotomy	3
Twins	4
Funis	1
Forceps	8
Footlings	4
Placenta prævia	1

The following table gives particulars of the cases of multiple births :

No.	Age of mother.	No. of confinement.	Date of birth.	Sex.		Result to mother.	Result to children.		Presentations.		Condition of placenta.
				1st.	2nd.		1st.	2nd.	1st.	2nd.	
2133	27	4	Jan. 13	M.	M.	R.	L.	L.	Head	Shoulder	N. S.
2303	34	8	March 5	M.	M.	R.	L.	L.	"	Breech	"
346	37	3	March 11	M.	F.	R.	S.	S.	?	?	"
399	25	4	April 6	M.	M.	R.	L.	L.	Head	Head	"
401	29	6	May 2	M.	M.	R.	L.	L.	"	"	"
411	24	5	April 7	F.	F.	R.	L.	L.	"	"	Single
675	31	1	June 9	M.	M.	R.	L.	S.	"	Breech	N. S.
680	23	3	June 29	F.	M.	R.	L.	L.	"	Head	"
715	43	11	July 20	F.	F.	R.	L.	L.	"	Shoulder	"
748	38	8	June 14	F.	F.	R.	L.	L.	"	Head	Single
782	36	7	June 22	M.	M.	R.	L.	L.	Breech	"	N. S.
951	24	4	Sept. 28	F.	F.	R.	L.	L.	Head	Breech	"
962	18	1	July 2	F.	F.	R.	L.	L.	"	Head	"
1054	23	3	Aug. 31	M.	M.	R.	L.	L.	"	"	Separate
1120	28	5	July 14	F.	F.	R.	L.	L.	"	Footling	N. S.
1125	36	4	June 17	F.	F.	R.	L.	L.	"	Head	"
1182	30	5	Sept. 25	F.	F.	R.	L.	L.	"	Breech	"
1286	45	12	July 12	F.	F.	R.	S.	S.	"	Head	"
1333	26	4	Sept. 7	F.	F.	R.	L.	L.	"	"	"
1345	25	4	Aug. 22	M.	F.	R.	L.	L.	"	Breech	"
1376	40	9	Aug. 29	F.	F.	R.	L.	L.	"	Head	"
1474	40	5	Sept. 22	F.	F.	R.	L.	L.	"	"	Single
1601	19	1	Oct. 1	F.	F.	R.	S.	L.	Breech	"	N. S.
1619	37	4	Aug. 29	M.	F.	R.	S.	S.	"	Breech	"
1786	34	4	Nov. 13	M.	M.	R.	L.	L.	Head	Head	"
1827	29	8	Oct. 11	M.	F.	R.	L.	L.	"	"	Single
2074	33	6	Dec. 5	M.	M.	R.	L.	L.	"	"	N. S.
2468	38	7	Dec. 16	M.	M.	R.	L.	L.	"	"	"

MEDICAL REPORT.

1887.

BY WALTER BAUGH HADDEN, M.D.LOND., F.R.C.P.

TABLE I.—*General Statement of Medical and Surgical Patients.*

	Males.	Females.	Total.	
Number of patients in Hospital, Jan. 1st, 1887	229	166	395	
” ” ” Dec. 31st, 1887	197	169	366	
” ” discharged or died during 1887:				
	Males.	Females.	Total.	Rate per cent.
Cured	1563	1064	2627	59·9
Relieved	540	465	1005	22·91
Unrelieved or other causes	116	108	224	5·1
Died	326	203	529	12·06
	2545	1840	4385	100·
Average number of days of each medical patient's stay in hospital	—25·2.			
” ” surgical	” 30·75.			

TABLE II.—*General Medical Statement.*

	Males.	Females.	Total.	
Number of Medical Beds	...	...	192
Number of patients in Medical Wards, Jan. 1st, 1887	92	82	174	
” ” admitted during the year 1887	962	1020	1982	
Total	1054	1102	2156	
” ” in Medical Wards, Dec. 31st, 1887	71	89	160	
” ” treated to a termination during 1887	983	1013	1996	
” ” discharged or died during 1887:				
	Males.	Females.	Total.	Rate per cent.
Cured	461	538	999	50·05
Relieved	219	251	470	23·54
Unrelieved or other causes	85	90	175	8·76
Died	218	134	352	17·63
Total	983	1013	1996	100·
Average number of days of each patient's stay in hospital	—25·2.			

Syphilis	7	2	5	4	2	1	1	4	2	1	1	1	1	5	1 readmission.
Intermittent fever	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Bitten two years previously.
Hydrophobia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Glands	2	1	1	1	1	1	2	1	1	1	1	1	1	1	
Acute rheumatism	116	65	51	5	39	41	18	10	3	6	41	47	20	2	4 readmissions.
Subacute rheumatism	18	6	12	1	5	7	4	1	1	2	9	4	3	2	2 readmissions. Purpura in 1.
Chronic articular rheumatism	11	3	8	1	3	4	1	1	1	1	2	1	3	4	1 from surgical ward.
Pleurodynia	6	3	3	3	1	1	1	1	1	2	2	2	2	1	
Rheumatic pains	13	7	6	1	2	3	3	2	1	1	4	5	2	1	1 readmission. (See under Acute rheumatism.)
Gonorrhœal rheumatism	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Both knees.
Synovitis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Left knee.
Myxœdema	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Diabetes mellitus	14	12	2	4	4	4	1	1	1	3	2	1	4	3	1 from surgical ward.
Purpura	8	4	4	2	3	1	1	1	1	1	1	4	1	1	Broncho-pneumonia in fatal case.
Scorbutus	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Lichen lividus.
Hæmophilia	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
Pernicious anæmia	5	4	1	1	1	3	1	1	1	4	1	1	1	2	2 doubtful.
Anæmia	28	28	12	14	2	2	3	5	14	6	3	5	1	2	Continued fever in 1; phlebitis in 1; optic neuritis in 1; pleurisy in 1.
Lymphadenoma	3	3	3	1	1	1	1	2	1	1	1	1	2	1	
Leucocythæmia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
General tuberculosis	4	1	3	1	2	1	1	1	1	1	1	1	1	1	
II. DISEASES OF THE SKIN															
Erythema nodosum	3	1	2	2	1	1	3	1	1	2	1	2	1	2	Rheumatic pains in 1.
Urticaria	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Epistaxis.
Purpura urticans	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Lichen urticatus	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Lichen planus	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Psoriasis	2	1	1	2	2	1	1	1	1	1	1	1	1	1	

TABLE III—continued.

DISEASE.	Number of cases.		Age.							Duration of residence.							Cured.		Re-lieved.			Unre-lieved.			Died.			REMARKS.											
	Total.	M. F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Mts. 1-3	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year	M	F	M	F	M	F	M	F		M	F	M	F							
II. DISEASES OF THE SKIN																																							
<i>—continued.</i>																																							
Ichthyosis	1	1				1							1																										
Pemphigus	1	1					1																																
Eczema	2	2				1	1																																
Herpes	1	1																																					
Acute dermatitis	1	1											1																										
Bronide rash	1	1																																					
III. DISEASES OF THE RESPIRATORY ORGANS.																																							
Laryngitis	8	5	3	1	1	3																																	
Syphilitic disease of larynx	2	1	1											1	6	1																							
Carcinoma of larynx	1	1																																					
Bilateral paralysis of abductors	1	1																																					
Malignant disease of trachea	1	1																																					
Bronchitis and bronchial catarrh	70	42	28	22	7	6	2	8	11	7	13	16	25	12	3	1																							
Broncho-pneumonia	18	12	6	13	4	1																																	
Acute pneumonia	68	53	15	8	10	24	7	10	5	3	14	20	25	6	3																								
Phthisis	46	29	17	2	3	11	18	8	1	3	7	2	14	14	8	1																							

Both general.
Left leg.

2 chronic.
1 congenital.

Thyroid gland involved.

1 contracted scarlet fever.
3 readmitted. (See under Bronchitis.)
38 on the right side, 19 on the left, 11 double.
Alcoholic paralysis in 1 fatal case.

TABLE III—continued.

DISEASE	Number of cases.		Age.							Duration of residence.							Cured.		Re-ceived.		Unre-ceived.		Died.	REMARKS.			
	Total.	M. F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week	Wks. 1-3	Wks. 3-4	Mts. 1-3	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year	M. F.	M. F.	M. F.	M. F.			M. F.	M. F.	M. F.
			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			1	1	1
IV. DISEASES OF THE ORGANS OF CIRCULATION—continued.																											
3. <i>Fessels.</i>																											
Thoracic aneurysm	15	14	1	2	1	7	2	3	4	2	3	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Subclavian aneurysm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Abdominal aneurysm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Obstruction of inferior vena cava	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Phlebitis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4. <i>Various.</i>																											
Anginoid	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Cardiac neurosis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
V. DISEASES OF THE DUCTLESS GLANDS.																											
Addison's disease	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Enlarged spleen	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
VI. DISEASES OF THE DIGESTIVE ORGANS.																											
1. <i>Alimentary canal.</i>																											
Stomatitis	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Extremely rapid cardiac action. Died after leaving the hospital.

Adrenals converted into caseous masses in both cases. Jaundice and mitral systolic bruit.

1 probably septic.

TABLE III—*continued.*

DISEASE.	Number of cases.		Age.							Duration of residence.						Cured.	Re- lieved.	Unre- lieved.	Died.	REMARKS.	
	Total.	M. F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6						Mts. 6-9	Mts. 9-12	Above 1 year
																M.	F.				
VI. DISEASES OF THE DIGESTIVE ORGANS— <i>continued.</i>																					
2. <i>Peritonæum.</i>																					
Acute peritonitis	2	2	1	1	1	1	1	1	1	1	2									No local cause found in 1 fatal case. No P.M. in 1.	
Chronic peritonitis	8	5	3	1	2	1	1	1	1	1	2	3			2					1 contracted diphtheria and died. 2 of the fatal cases were non-tubercular.	
Malignant disease	1	1	1	1	1	1	1	1	1	1	1										
3. <i>Liver.</i>																					
Cirrhosis	26	11	15	1	1	4	13	3	3	1	7	9	6	2		1					3 readmitted once, 1 four times. Paracetosis in 18. 2 contracted diphtheria, 1 of whom died.
Abscess	2	2																			Both aspirated. 1 tropical. Probable cirrhosis. Spleen enlarged.
Enlargement	1	1																			Operation in both.
Hydatid	2	2									2										Probable disease also of kidneys.
Syphilitic disease	1	1																			
Lardaceous disease	1	1																			
Malignant disease	3	3									2										
Biliary colic	4	1	1								1										No jaundice.
Obstructive jaundice	15	7	8	1	2	2	1	6	3	2	2	8	3								1 in a newly-born child; 8 probably due to gall-stones; 3 to malignant disease; 3 catarrhal.

TABLE III—continued.

DISEASE.	Number of cases.		Age.							Duration of residence.							Cured.	Re- lieved.	Unre- lieved.	Died.	REMARKS.							
	Total.	M. F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week	Wks. 1-2	Wks. 3-4	Mts. 1-2	Mts. 3-4	Mts. 5-6						Mts. 6-9	Mts. 9-12	Above 1 year	M. F.	M. F.	M. F.	M. F.
VIII. DISEASES OF THE NERVOUS SYSTEM—continued.																												
Tubercular meningitis	8	2	6	3	3	2	...	...	...	...	3	3	1	1	...	...	...	...	...	...	...	...	...	...	2	6	1 from surgical ward.	
Retraction of head	2	2	...	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	2	1 readmission (see under Mitral Disease). 14 on the right side, 2 of whom were aphasic; 10 on the left side.		
Hemiplegia	24	14	10	...	1	1	1	5	13	2	2	...	...	...	...	...	...	...	...	...	...	...	...	1	11	7	2	2 cases of infantile hemiplegia, 1 of which contracted scarlet fever.
Hemiplegic hemichorea	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	Cardiac disease.	
Aphasia	2	2	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	Dementia in 1.	
Cerebral hemorrhage.	7	4	3	...	...	...	3	...	...	4	5	2	...	...	...	...	...	...	...	...	...	...	...	...	4	3	Embolism in 1; thrombosis in 2.	
" softening	3	2	1	...	...	...	1	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	2	1	1 readmission. 1 from surgical ward. 4 probably syphilitic.	
" tumour	21	15	6	...	4	5	7	4	...	1	2	2	5	7	2	1	...	...	...	...	...	...	...	7	5	3	5	1 from surgical ward. 4 probably syphilitic.
" abscess	1	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	Probable case of actinomycosis.
Thrombosis of intracranial sinuses	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	General sclerosis of cortex.
Sclerosis of brain	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Chronic hydrocephalus	3	1	2	2	1	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	1	1	1	...

Headache	15	10	5	1	4	4	2	2	1	1	7	4	4	...	7	3	...	1	3	1	...	Suspicion of tumour in 1 case, a readmission. 1 probably syphilitic.	
Vertigo	3	1	2	...	1	1	...	1	1	...	1	1	...	...	1	1	...	...	...	1	...	Softening of the white matter and distension of ventricles with fluid.
Hemicrania	1	1	...	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Obscure cerebral disease	1	1	...	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Paralysis agitans	2	...	2	...	...	...	1	...	1	...	...	1	1	...	...	...	...	1	1	...	...	No naked-eye change in either case.
Disease of pons	1	1	...	...	1	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	1 a newly-born child.
Bulbar paralysis	2	...	2	...	...	...	1	...	1	...	...	1	1	...	...	...	...	...	...	...	...	Nothing abnormal seen in the nervous system.
Tetanus	2	2	...	1	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Tetany	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Idiocy	1	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
General paralysis of insane	9	8	1	...	...	4	5	...	...	...	2	4	2	1	...	...	...	5	1	3	...	
Other mental disorders	12	7	5	...	7	3	...	1	1	1	4	4	3	2	1	2	1	3	
Chorea	20	5	15	...	3	15	1	1	3	4	11	2	2	13	2	2	1	
Choreiform movements	1	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	1 readmission. (See under Subacute Rheumatism.) Probably functional.
Hysteria	30	6	24	...	1	7	11	8	2	1	...	8	11	2	1	3	16	3	7	1	1 readmission. 3 treated by massage, all being cured.
Epilepsy	14	6	8	...	2	5	4	2	1	1	2	4	4	2	1 readmission. (See under Subacute Rheumatism.) Probably functional.
Epileptiform convulsions	4	4	...	...	...	...	1	2	...	...	1	1	2	...	...	...	...	...	...	...	...	1 readmission. 3 treated by massage, all being cured.
Infantile convulsions	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	Alcoholism in fatal case. The cases "cured" were admitted for the fit.
Laryngismus stridulus	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1 readmission. History of head injury in all.
Cervical pachymeningitis	2	2	...	1	...	...	1	...	...	...	...	...	1	1	...	...	...	1	1	1	...	
Spinal meningitis	1	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	Acute. Complicated with spinal caries.
Paraplegia	20	13	7	...	1	2	7	5	4	1	...	1	7	1	3	1	...	2	11	5	...	1 readmission. Suspicion of hysteria in 1; probable caries in 5. Second attack in 2.	

TABLE III—continued.

DISEASE.	Number of cases.		Age.							Duration of residence.							Cured.		Re- lieved.		Unre- lieved.		REMARKS.			
	Total.	M. F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-2	Wks. 2-4	Wks. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year	M.	F.	M.	F.	M.		F.	M.	F.
			1	2	3	2	4	3	4	4	4	8	3	4	7	1	5	5	3	1		5	2	2	1
X. SURGICAL AND MISCELLANEOUS—continued.																										
Various	24	15	9	2	3	2	4	3	4	4	8	3	4	7	1	...	...	5	5	3	1	5	2	2	1	3 to surgical ward. 1 readmitted twice. Disease of shoulder and pyæmia in 1 fatal case, persistent uræchus in 1, ulceration of tonsils in 1.
Unclassified	49	22	27	8	9	9	6	3	2	3	36	8	3	1	1	...	...	13	20	1	...	5	6	3	1	No P.M. in 2 fatal cases; nothing definite found P.M. in 2.
XI. DISEASES OF THE FEMALE GENITALIVE ORGANS.																										
1. Uterus.																										
Metrorrhagia	4	...	...	...	2	1	1	...	...	...	...	1	2	1	...	...	...	...	...	...	4	...	...	...	...	Suppuration in 3; perimetritis in 2; hæmatocele in 1; ischio-rectal fistule in 1.
Dysmenorrhœa	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	pyo-salpinx, transferred to surgical ward. Tuberculosis in fatal case.
Parametritis	17	...	...	...	11	3	3	...	...	...	...	3	6	7	1	...	...	...	...	...	7	...	10	...	...	Parametritis in 1; hæmatocele in 2; ante-flexion in 1. Parametritis in 1.
Pelvic abscess	2	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	Parametritis in 1; hæmatocele in 2; ante-flexion in 1. Parametritis in 1.
Perimetritis	7	...	...	...	1	5	1	...	...	...	2	...	2	1	2	...	...	...	...	...	3	...	1	...	...	Parametritis in 1; hæmatocele in 2; ante-flexion in 1. Parametritis in 1.
Pelvic hæmatocele	2	...	...	...	2	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	2	...	...	...	...	Parametritis in 1.

TABLE III—*continued.*

DISEASE.	Number of cases.		Age.						Duration of residence.						Cured.		Re- lieved.		Unre- lieved.		Died.	REMARKS.							
	Total.	M. F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week	Wks. 1-3	Wks. 4-6	Mts. 1-3	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year	M.	F.			M.	F.	M.	F.	M.	F.	
XI. DISEASES OF THE FEMALE GENERATIVE ORGANS—continued.																													
2. Ovaries.																													
Ovaritis	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1 acute; 1 chronic, transferred to surgical ward.
Ovarian tumour	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3 transferred to surgical ward.
3. <i>Pregnancy and its accidents.</i>																													
Retained foetal products	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	Pelvic inflammation in 1.
Pregnancy	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	Probable pyonephrosis in 1.
Vomiting of pregnancy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Albuminuria of pregnancy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Induction of premature labour.
Chorea of pregnancy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Retroversion of gravid uterus	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1 aborted.
Extra-uterine foetation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Miscarriage	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Induction of premature labour	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	For rickety pelvis.
Post-partum hæmorrhage	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1 after miscarriage.
Ruptured perineum	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	1 readmission. Parametritis in 1; pregnancy in 1.

TABLE IV.—Table of Mortality.

DISEASE.	Total.		Age.								Mortality per cent.	
	No. discharged.	No. died.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	60-70		Above 70
1. GENERAL DISEASES.												
Scarlet fever	18	1	1									5.2
Enteric fever	47	14		1	3	6	3	1				22.9
Erysipelas	34	1					1					2.8
Pyæmia	1	1			1							...
Diphtheria	71	53	40	12	1							42.7
Hydrophobia . . . . .	...	1		1								...
Glanders . . . . .	...	2				1		1				...
Diabetes mellitus	7	7				2	4	1				50
Purpura	7	1	1									...
Lymphadenoma	1	2							2			...
General tuberculosis	1	3		1	1			1				...
2. DISEASES OF THE SKIN.												
Acute dermatitis . . . . .	...	1	1									...
3. DISEASES OF THE RESPIRATORY ORGANS.												
Malignant disease of trachea . . . . .	...	1						1				...
Bronchitis	63	7	4					1			2	10
Broncho-pneumonia	11	7	6		1							38.8
Acute pneumonia	50	18	3		2	1	4	4	3	1		26.4
Phthisis	26	20	1		1	6	7	2		3		43.4
Pneumothorax	1	2				1	1					...
Empyema	8	7	3	1	1		1	1				46.6
Pulmonary collapse . . . . .	...	1	1									...
4. DISEASES OF THE ORGANS OF CIRCULATION.												
Pericarditis	1	1						1				...
Adherent pericardium . . . . .	...	1						1				...
Fibroid disease of heart . . . . .	...	1						1				...
Malformation of heart . . . . .	...	2	1					1				...
Mitral	48	11			1	5	1	3	1			18.6
Aortic	15	10						3	6		1	40
Mitral and aortic	16	10		1	3	1	4			1		38.4
Thoracic aneurysm	10	5					1	2	1	1		33.3
5. DISEASES OF DUCTLESS GLANDS.												
Addison's disease . . . . .	...	2				2						...
6. DISEASES OF THE DIGESTIVE ORGANS.												
Stricture of œsophagus	3	7					1		4	2		70
Gastric ulcer	20	4						2	2			16.6
Malignant disease of stomach	2	6					1	1	3	1		...

TABLE IV—continued.

DISEASE.	Total.		Age.								Mortality per cent.	
	No. discharged.	No. died.	Under 5	5-10	-20	-30	-40	-50	-60	-70		Above 70
6. DISEASES OF THE DIGESTIVE ORGANS—continued.												
Villous growth of stomach. . . . .	...	1	...	...	...	...	...	...	1	...	...	...
Intestinal catarrh . . . . .	...	2	2	...	...	...	...	...	...	...	...	...
Ulceration of intestine . . . . .	...	2	...	...	1	...	...	...	...	...	1	...
Dysentery	2	1	...	...	1	...	...	...	...	...	...	...
Intestinal obstruction	6	12	1	1	2	3	...	4	1	...	66.6	
Perforation of vermiform appendix . . . . .	...	4	...	1	3	...	...	...	...	...	...	...
Acute peritonitis . . . . .	...	2	...	...	1	1	...	...	...	...	...	...
Chronic peritonitis	3	5	1	1	1	1	...	...	...	...	...	...
Malignant disease of peritoneum . . . . .	...	1	...	...	...	...	...	1	...	...	...	...
Cirrhosis of liver	19	7	1	...	1	1	1	...	1	2	26.9	
Malignant disease of liver . . . . .	...	3	...	...	...	...	...	1	...	2	...	...
Obstructive jaundice	14	1	...	...	...	...	...	...	1	...	6.6	
Ulcer of gall-bladder . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Abdominal tumour	17	5	...	...	...	...	1	2	1	1	22.7	
Abdominal abscess	2	1	...	...	...	1	...	...	...	...	...	...
7. DISEASES OF THE GENITO-URINARY SYSTEM.												
Acute nephritis	25	7	3	...	1	2	1	...	...	...	21.8	
Chronic nephritis	26	12	...	...	...	...	3	5	2	1	31.5	
Malignant disease of kidney . . . . .	...	1	...	...	...	...	...	...	1	...	...	...
8. DISEASES OF THE NERVOUS SYSTEM.												
Acute meningitis	1	2	...	...	1	...	1	...	...	...	...	...
Tubercular meningitis . . . . .	...	8	3	3	2	...	...	...	...	...	...	...
Cerebral hæmorrhage . . . . .	...	7	...	...	...	...	3	...	...	4	...	...
„ softening . . . . .	...	3	...	...	1	...	...	2	...	...	...	...
„ tumour	15	6	...	...	...	2	1	3	...	...	28.5	
„ abscess . . . . .	...	1	...	...	1	...	...	...	...	...	...	...
Thrombosis of intracranial sinuses . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Sclerosis of brain . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
Chronic hydrocephalus	2	1	1	...	...	...	...	...	...	...	...	...
Obscure cerebral disease . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
Bulbar paralysis . . . . .	...	2	...	...	...	...	...	1	...	1	...	...
Tetanus . . . . .	...	2	1	...	...	...	...	1	...	...	...	...
Tetany . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
Epilepsy	13	1	...	...	...	...	...	1	...	...	7.1	
Spinal meningitis . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Myelitis . . . . .	...	5	...	...	...	1	1	2	...	1	...	...
Locomotor ataxy	6	1	...	...	...	...	1	...	...	...	...	...
Alcoholic paralysis	10	1	...	...	...	...	1	...	...	...	9	
9. POISONING.												
Alcoholism	16	1	...	...	...	...	1	...	...	...	5.8	
Belladonna	2	1	...	...	...	1	...	...	...	...	...	...
Sulphuric acid . . . . .	...	1	...	...	...	1	...	...	...	...	...	...

TABLE IV—*continued.*

DISEASE.	Total.		Age.							Mor- tality per cent.		
	No. dis- charged.	No. died.	Under 5	5-10	-20	-30	-40	-50	-60		-70	Above 70
10. SURGICAL AND MISCELLANEOUS.												
Marasmus	1	2	2	...	...	...	...	...	...	...	...	...
Abscess	7	4	3	...	...	...	...	1	...	...	...	36.3
Cellulitis . . . . .	...	3	...	...	1	1	...	1	...	...	...	...
Spinal caries . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Disease of shoulder . . . . .	...	1	...	...	...	1	...	...	...	...	...	...
Persistent urachus . . . . .	...	1	1	...	...	...	...	...	...	...	...	...
Ulceration of tonsils . . . . .	...	1	...	...	...	...	...	1	...	...	...	...
Unclassified . . . . .	...	4	1	...	...	1	...	...	1	...	1	...
11. DISEASES OF THE FEMALE GENERATIVE ORGANS.												
Pelvic abscess	1	1	...	...	...	1	...	...	...	...	...	...
Retroversion	1	1	...	...	...	1	...	...	...	...	...	...
Metritis	3	1	...	...	...	1	...	...	...	...	...	...
Uterine fibroid	8	2	...	...	...	...	...	2	...	...	...	20
Malignant disease of uterus	14	2	...	...	...	...	...	2	...	...	...	12.5
Ovarian tumour	3	1	...	...	...	...	...	...	1	...	...	...
Extra-uterine fœtation . . . . .	...	1	...	...	...	...	1	...	...	...	...	...

TABLE V.—Cases of Infectious Diseases originating in Hospital.

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of attack.	Result.	Remarks.
M. S.	F.	—	—	Rötheln	March 20	C. March 29	Sister Charity.
F. G.	F.	25	—	"	May 2	C. May 16	Nurse.
E. B.	F.	3	Disease of hip	Measles	February 1	C. February 16	From Victoria Ward.
W. K.	M.	3	Laceration of hands	Varicella	October 3	C. October 17	Ditto.
R. T.	F.	2½	Disease of ear	"	" 3	C. " 16	Ditto.
C. D.	F.	2½	Burn	"	" 3	C. " 16	Ditto.
M. S.	F.	5	Disease of hip	"	" 7	C. " 26	Ditto.
C. J.	M.	24	—	"	" 22	C. November 5	Student.
L. P.	F.	2	Papilloma of larynx	Scarlet fever	January 12	C. April 26	From Victoria Ward.
E. F.	F.	26	Stricture of rectum	"	February 25	C. March 9	From Elizabeth Ward.
M. L.	F.	14	Pleurisy	"	April 18	C. June 6	From Christian Ward.
E. B.	F.	3½	Acute bronchitis	"	May 13	C. " 8	Ditto.
F. M.	M.	8	Vesical calculus	"	" 16	C. August 27	From Edward Ward.
S. S.	M.	7	Infantile hemiplegia	"	" 22	C. June 26	From Arthur Ward.
M. W.	F.	—	—	"	June 1	C. July 11	Sister Arthur.
F. B.	M.	5	Diphtheria	"	" 17	C. August 7	From Job Ward.
W. S.	M.	28	Disease of hip	"	July 1	C. September 2	From Edward Ward.
G. S.	M.	36	—	"	September 2	C. October 17	Student.
M. C.	F.	9	Necrosis of metatarsus	"	" 23	C. November 28	From Alexandra Ward.
A. H.	F.	3	Burn	"	" 23	C. October 23	Ditto.
A. B.	F.	25	—	Enteric fever	Nov. 18, 1886	C. February 9	Nurse.
M. A.	F.	27	—	"	" 20, 1886	C. January 27	Nurse.
E. L.	F.	32	—	"	November 8	C. December 19	Nurse.
H. C.	M.	1½	—	"	January 10	D. January 14	From Victoria Ward.
F. M.	M.	3	Cirrhosis of liver	Diphtheria	" 12	C. February 6	Ditto.
F. L.	F.	1	Fractured femur	"	February 16	C. February 6	Ditto.
H. N.	M.	4½	Tubercular peritonitis	"	March 5	D. " 8	Ditto.
W. R.	M.	2	Fractured femur	"	March 5	D. " 8	Ditto.
H. H.	M.	2	Empyema	"	" 12	Nil " 19	Ditto.
M.	M.	5	Abscess of chest wall	"	April 17	C. April 27	Ditto.
J. S.	F.	37	Cirrhosis of liver	"	" 21	C. May 4	From Christian Ward.
H. K.	F.	20	Mitral regurgitation	"	" 26	C. " 17	From Charity Ward.
E. B.	F.	1½	Empyema	"	August 1	D. August 8	From Victoria Ward.
E. K.	F.	3	Fractured femur	"	" 14	C. " 23	Ditto.
F. G.	F.	3	Spinal caries	"	September 19	D. September 23	Ditto.
H. G. M.	M.	—	—	"	" 24	C. " 28	Resident Assistant Physician.

SPECIAL ANALYSES AND ABSTRACTS.

I.—PYÆMIA.

Fatal case.

Female, æt. 22, admitted July 16th, died July 22nd. Five days ago suddenly seized with severe pain in right buttock.

On admission there was great tenderness from the crest of the ilium down to the gluteal fold on right side, and very shortly the tenderness extended as far as the popliteal space. There was no fulness, no fluctuation, no undue heat. Temp. 104·2°. Perspiring freely. Occasional shivering.

On the following day an incision was made over the sacro-iliac joint, but nothing was found. The tongue was coated and dry. The temperature varied from 101·6° to 103·4°.

On July 21st the respirations were 52 per minute, the pulse 140, the highest temp. 103·4°. The tongue remained as before, and the vomiting, which had been occasional since admission, had become more frequent. There was diminished resonance, with crepitations over the greater part of the left lung posteriorly. On the evening of the same day she became noisily delirious. The symptoms continued without much change until July 22nd, when she died, the temperature rising to 105°. No abscesses and no swelling of joints were detected during life.

Post-mortem examination.—The periosteum over the greater part of the right iliac fossa was wanting, the denuded surface being covered with pus. There were signs of acute inflammation of the right sacro-iliac synchondrosis, the articular surfaces being red, injected, and coated with pus. In the lungs there were numerous pyæmic infarcts, and the pleuritic surface corresponding to each of them was covered with lymph. The left lower lobe was in a state of red hepatisation. The spleen was moderately enlarged and soft. The joints were not swollen.

II.—HYDROPHOBIA.

Fatal case.

Male, æt. 5, admitted May 16th, died May 17th. Was bitten by a dog over the left eyebrow two years previously. Nothing was seen of the dog afterwards.

For a few days preceding admission the scar seemed to be tender. The day before admission he suddenly became restless, rolled about on the floor, and refused food and drink.

On admission he was excited, and his expression was one of terror, but he answered rationally. The respirations were 52, irregular, and from time to time there were spasmodic contractions of the diaphragm which gave rise to a peculiar noise like a long hiccough. Pulse 136, regular, very weak. The arms and legs were rigid; the fingers strongly flexed. There was tenderness in the epigastrium. When offered fluid he became very excited, and tried to knock the vessel away. A little fluid when taken into the mouth was immediately ejected. The mouth contained a large amount of ropy mucus. The urine was usually voided into the bed, but once he passed it voluntarily, and then he had general convulsive movements. The urine contained a small quantity of albumen. There was a small scar over the inner part of the left eyebrow, but it was not swollen, red, or tender. The next day it was noted that he was still very excited, though he had quiet intervals. He complained of toothache, as he had several times since the onset of his illness. The submaxillary gland was enlarged, but not tender. Once when offered drink he became very excited, tried to escape from bed, and when restrained had violent general convulsive movements, arching of the back, and spasmodic respiration. He was constantly ejecting sticky mucus from the mouth. Ether was sprayed over the back of the neck and spine. He seemed to be much quieter in consequence, and drank some milk. An hour and a half later he again became excited, and the ether spray was applied with some benefit. In the evening of the same day he had a recurrence of the convulsions, with arching of the back, and retraction of the head. He was constantly ejecting his saliva; the pulse became very weak. The ether spray was again used, and he expressed himself as feeling better afterwards.

He died at 6 p.m. on May 17th after a general convulsive seizure. The temperature varied from 99·2° to 102°, the latter being registered just before death.

Post-mortem examination.—All the organs, including the brain and spinal cord, were normal, except that there was intense congestion of the lungs.

III.—GLANDERS.

Fatal cases.

1. Male, *æt.* 47, a horsekeeper, admitted June 7th, died June 9th. A month ago attended a horse suffering from glanders, and said that he got poisoned in the left wrist.

On admission the patient seemed extremely ill, the respirations were 44, the pulse 104, weak, and the temp. 102·2°. On the forehead there was a dull red indurated patch, the centre of which was excoriated. On the nose there were a few small pustules. There was brawny infiltration of both lower eyelids, with much chemosis of the conjunctiva. Scattered over the trunk and limbs there were numerous abscesses and pustules, and deep seated in the subcutaneous

tissue and muscles there were hard nodules. No enlarged glands detected. No discharge from the nose. Some crepitation at the bases of the lungs behind. On the evening of the day of admission he became delirious, and passed his urine into the bed. He died on the morning of June 9th. The temperature varied from 100° to 103·8°.

Post-mortem examination.—There were numerous ill-defined abscesses in the subcutaneous tissue and in the muscles, and in addition there were scattered pustules, which were quite superficial. No effusion into joints; no pleurisy, pericarditis, or peritonitis. In the left lung there were two or three small abscesses, and in the right lung there were numerous grey patches of broncho-pneumonia and extensive collapse of the lower lobe.

1. Female, æt. 27, admitted August 26th, died August 27th. The patient lived in a mews, and was accustomed to attend to the horses. A week before admission a horse died, probably from glanders. The patient took to her bed about eight days ago, and since then has been delirious.

On admission she was delirious and tremulous, the lips and tongue were dry, the respirations 50, the pulse 120, very feeble, the temp. 102·4°. There were a few small cutaneous pustules, chiefly on the legs, and a number of subcutaneous nodules, some of which were evidently suppurating. No enlarged glands; no discharge from the nose; no affection of conjunctivæ. Rhonchi over both lungs. She died on the night of August 27th. The temperature varied from 102° to 108·4° just before death.

Post-mortem examination.—Some collections of pus were found in the subcutaneous tissues of the trunk and limbs. The nares appeared normal. No effusion into joints. There was a fairly-defined abscess abutting on the posterior border of the lower lobe of the left lung. No inflammation of serous membranes.

IV.—DIABETES.

Fatal cases.

1. Male, æt. 39, admitted May 31st. No history obtained.

On admission he was very feeble, though conscious. The odour of acetone was detected in the breath. Next day he became comatose. The urine contained much sugar and a trace of albumen. Died June 15th.

Post-mortem examination.—Nothing abnormal found.

2. Male, æt. 24, admitted June 2nd. The disease apparently dated from a month before admission.

On admission he was conscious. The breath was said to have a sweetish smell. The next day he became drowsy, and on the morning of June 4th he died. The urine contained sugar and a trace of albumen.

Post-mortem examination.—There was injection of the surface of the brain and the puncta were prominent. No other pathological change.

3. Male, æt. 25, admitted June 15th. He has been suffering from diabetes for about sixteen months.

On admission he was drowsy, but answered readily. He had dyspnoea, and over the middle lobe of the right lung crepitations were audible, but there was

no dulness. The odour of acetone was detected in the breath. The urine contained much sugar and a trace of albumen; it gave the acetone reaction. The next day he became more drowsy, and finally comatose. He died on June 17th. There was moderate pyrexia, the highest temperature being 102.4° .

Post-mortem examination.—Pneumonic consolidation, partly red, partly grey, of right middle lobe. No other pathological change detected.

4. Male, *æt.* 40, admitted July 29th, died October 12th. One sister died of diabetes. The patient's symptoms began about a year previously, and about a week before admission he commenced to cough.

On admission he was emaciated and weak. The tongue was dry and red, the appetite excessive, and he was unduly thirsty. He complained of cough, and there was a suspicion of incipient mischief at both apices. The urine contained much sugar. After he had been in the hospital two months marked evidence of phthisis was found. For several days before death the sugar disappeared from the urine. No albumen was present at any time. The temperature was often subnormal, but during the last few weeks there was frequently a slight degree of fever.

Post-mortem examination.—Both lungs exhibited numerous patches of consolidation, chiefly made up of yellow cheesy masses. In the right lung the lower lobe was mainly affected, in the left the upper lobe. At each apex two or three small cavities existed. No other pathological change was detected.

5. Male, *æt.* 35, admitted October 21st. Had been abroad and had dysentery. His present illness began two years ago.

On admission he was very weak and thin. The urine contained sugar, no albumen. During seven days the bowels were only relieved once, and at the end of this time he began to have severe abdominal pain.

On the evening of October 27th the breathing became laboured, and the pulse very feeble and rapid. During the day he passed one motion mixed with blood. Died on October 28th. Temp. varied from 96.4° to 98.8° .

Post-mortem examination.—The upper lobe of the right lung was very œdematous and friable but crepitant. The mucous membrane of the lower half of the large intestine was swollen, deeply congested, and in some parts sloughing. Scattered up and down were some clear, well-defined ulcers, and, in addition, there were many small superficial ulcers originating in the solitary follicles. The brain was injected and the subarachnoid fluid in excess. The fourth ventricle was normal.

6. Female, *æt.* 38, admitted February 17th. Marked history of phthisis in the near relatives. Her present illness began six months previously.

On admission she was very thin and weak. There was much sugar in the urine but no albumen. The lungs were said to be normal.

On April 12th the urine was for the first time noted as containing albumen, and the quantity was one third. From that time until her death a small amount of albumen was often found, though at times it was absent. The day before death she became comatose, and a large amount of albumen was present in the urine.

On May 8th physical signs of phthisis were observed. Throughout her illness she had occasional attacks of diarrhœa. Towards the end there was occasional slight pyrexia. Died May 29th.

Post-mortem examination.—In both lungs there were scattered cheesy masses, and cavities at both apices. No miliary tubercles. There was tubular nephritis. In the brain the puncta vasculosa were well marked. The floor of the fourth ventricle was normal, but on section there were numerous red points. No other pathological change.

V.—LYMPHADENOMA.

Fatal cases.

1. Male, æt. 54, admitted December 10th, 1886. Had been losing flesh for a year.

On admission there was a hard, movable tumour in the abdomen, below the umbilicus and a little to the right of the middle line. There were the signs of effusion into each pleural cavity and into the abdomen. The lower end of the spleen was felt about the level of the umbilicus. Some of the superficial lymphatic glands were moderately enlarged. The lower limbs and scrotum were œdematous. On two occasions the abdomen was tapped. The fluid withdrawn was milky but blood stained; its sp. gr. was 1025, and it contained much albumen. Microscopically, there were leucocytes and red blood-corpuscles, a few large, granular, rounded cells, with large spherical nuclei and much finely granular material, to which the milky appearance was probably due. On standing, the æsthetic fluid separated into an upper cream-coloured opaque layer, and a substratum of scarlet clot.

Towards the end of life a quantity of pus-like fluid accumulated in the anterior chambers of the right eye, and bedsores formed. The temperature was usually normal or subnormal, often 95° and never above 100·8°. The bowels were irregular, sometimes open once daily sometimes not at all, occasionally relieved four, five, or six times in the twenty-four hours. The character of the stools was not noted. Died on February 20th, 1887.

Post-mortem examination.—The right pleura contained five pints of thin, pus-like fluid, and the left pleura a pint and a half. No pleurisy. A little serous fluid in pericardium. There were signs of general peritonitis, the adhesions being evidently of some standing; several pints of fluid similar to that seen in the pleural cavities were found in the abdomen. There was a large abdominal tumour, weighing nearly fourteen pounds, involving the mesenteric and retroperitoneal glands, but the former to a much greater extent than the latter. On section, the mass was pale, rather firm, and studded sparsely with recent hæmorrhages. The iliac, inguinal, cervical and axillary glands were also affected. The urachus was thickened, dilated, and full of what appeared to be inspissated pus. On the surface of the right lung there were some small granulations which resembled miliary tubercles, and on the surface of the left lower lobe there were some yellowish-white masses of new growth. A solitary nodule of growth was found in the liver. The spleen was much enlarged. On section it was dull-red, studded with numerous small, white nodules, apparently diseased Malpighian bodies, and contained one large old infarct. Kidneys slightly granular, but con-

tained no new growth. In the stomach, near the pyloric orifice, was a small nodule of growth, apparently arising in the submucosa. All the intestinal glands, solitary and agminated, from the duodenum to the rectum, was much enlarged, elevated and firm. The enlargement was very marked in Peyer's patches, and in the ileum near the valve the masses were enormous. The growth was strictly limited to the glands, and there was no ulceration. Microscopical examination showed abundant small round cells, evidently a hyperplasia of the normal lymphatic tissue. The round-celled growth was localised to the gland, and there was no sign of invasion to neighbouring parts.

2. Male, æt. 54, admitted June 11th. Had complained of sore-throat for two years. Three months ago the glands in the armpits and groins became swollen, and a little later those of the neck became affected. Swelling of the abdomen noticed a month ago.

On admission there was found to be great enlargement of all the lymphatic glands; the liver and spleen were felt some distance below the costal arch. The site of the left tonsil was occupied by a large ulcer covered with yellowish slough, and there was a small perforation in the anterior pillar of the fauces on the left side. Both legs were œdematous. The urine contained a small amount of albumen. The red blood-corpuscles were diminished in number, rather pale, but formed good rouleaux. No marked increase in the white cells. The larynx was examined shortly after admission, and it was thought that there was impaired mobility of the right vocal cord. He died on June 22nd, with symptoms of bronchitis and œdema of lungs. There was moderate pyrexia throughout.

Post-mortem examination.—There was general enlargement of the lymphatic glands, and in the abdomen there was a large tumour occupying the position of the mesenteric glands. There was only one affected gland in the anterior mediastinum, and that was not of very large size. The glands everywhere were discrete; on section they were in some places white and moderately firm, in others pale yellow, as though undergoing caseation, and in others hæmorrhagic. The left tonsil was converted into a large, irregular, and deep ulcer. There were two raised masses of growth behind the circumvallate papillæ. The liver was very large, and studded with small white nodules of growth. The spleen also was very large, but contained no growths. Hæmorrhages were seen on the mucous membrane of the stomach and intestines, but there was no affection of the glands. Lungs emphysematous and very œdematous. Cortex of kidneys pale and swollen.

VI.—EMPHYEMA.

Selected fatal case.

Male, æt. 4, admitted April 6th. Scarlet fever seven months ago, followed by nephritis. Six weeks before admission an abscess was noticed on the left side of chest, which burst a few days later.

On admission there were the signs of effusion into the left side of chest, and in the fifth interspace in front there was a sinus through which thick pus exuded. The day after admission an incision was made on the left seventh inter-

space in the posterior axillary line, and a drainage-tube inserted. This was followed by a free discharge of pus and the child was much relieved. In a few weeks the dulness was confined to the lower part of the left chest behind, and the air entered fairly well.

On June 28th the signs of effusion had increased, and on July 13th a portion of rib was excised to allow freer drainage.

On August 25th it was noted that the wound was syringed daily with chlorinated soda, and on October 5th it was stated that the syringing was done twice daily.

On October 22nd he began to vomit, and this continued for two days. The syringing of the pleural cavity was then omitted.

On the 26th it was noted that he was very apathetic, that the pulse was very feeble, and that he had lost 4 lbs. 6 oz. in weight in nineteen days. Nutrient suppositories were ordered.

On November 5th the note was to the effect that the symptoms above mentioned had persisted, and that he occasionally vomited. For the preceding few days it was stated that he had not spoken with the exception of saying "Yes" or "No" once or twice. He nodded his head in reply to inquiries. He occasionally carried his hand to his head. He did not scream out, there was no paralysis or rigidity, and no unconsciousness. In the afternoon of November 5th he had a sharp attack of epistaxis, and was restless in the night. He died on November 6th.

A few hours previously a copious purpuric rash appeared on the backs of the hands and wrists, and he had melæna. He was conscious up to the last. There was occasional slight fever, but the temperature was usually normal or sub-normal.

Post-mortem examination.—The left pleural cavity was closed except for a sinus which ran upwards and backwards from an opening in the eighth intercostal space in the axillary line. There was no retained pus. The left lung was collapsed throughout. In the left frontal lobe there was a globular abscess, an inch and a half in diameter, containing thick greenish, non-odorous pus; anteriorly it reached to an inch from the tip of the lobe, and above to about three quarters of an inch from the vertex. Membranes and sinuses normal. There were hæmorrhages in most of the organs, and the stomach and intestines contained a good deal of blood.

VII.—SUPPRESSION OF SALIVARY SECRETION.

Female, æt. 65, admitted December 18th. Her mouth was noticed to be dry seven months before admission. There was nothing in her previous history to throw any light upon her present state.

On admission, no sign of organic disease in the viscera was detected, and her general health was excellent. The tongue was red, devoid of epithelium, cracked in all directions like crocodile's skin, and absolutely dry. The inside of the cheeks, the hard and soft palate, were also quite dry; the mucous membrane was smooth, shiny and pale, but here and there a few patches of injection were seen. The tonsils were normal. There was a marked deficiency of moisture at the back

of the pharynx. Nothing abnormal was noticable in the appearance of the sublingual gland, and nothing unusual could be detected by sight and by palpation in the parotid and submaxillary regions. No calculus was felt in Steno's ducts. Common sensation of the inside of the mouth was unimpaired, and the reflex action of the palate was present. Taste-perception was slow, clearly in consequence of the deficiency of moisture. The condition of the saliva was slightly acid. Perspiration, according to the patient, was almost absent, but the skin was not unusually dry or harsh. The hair was quite natural in appearance, and exceptionally abundant for her age. The lachrymal secretion was very deficient, and could not be excited when she smelt a strong solution of ammonia. No local affection of the lachrymal secretion was detected. The sense of smell was unimpaired, but the nasal mucous membrane seemed dryer than normal. The urine was natural in quantity and quality. The knee-jerks were natural. There was no sign of facial paralysis, present or past. The treatment consisted in the internal administration of tincture of jaborandi in doses of thirty minims three times daily. A few subcutaneous injections of pilocarpin were also given. Under this treatment the mouth became moister. Discharged relieved December 17th.

VIII.—FIBROID DISEASE OF HEART.

Fatal case.

Male, æt. 33, painter, admitted June 16th, died June 29th. No note of any special illnesses. Has had cough for some months.

On admission, there was much dyspnœa and cough. The lower limbs were œdematous. The pulse was 100, very feeble and irregular. There was no blue line on the gums. The cardiac dulness was moderately increased to the left; there was a systolic and præ-systolic murmur, and the second sound was accentuated. Crepitations were audible at the bases of the lungs. No ascites detected; liver much enlarged. No albumen in urine. Four days after admission there was said to be a diastolic murmur at the base, and a systolic at the apex. The patient became more livid, the limbs cold, and the pulse very feeble. Temperature usually subnormal, the range being from 95° to 97·6°.

Post-mortem examination.—Three pints of serous fluid in abdomen, a pint in right pleural cavity, and an ounce in pericardial sac. All the cavities of the heart were dilated; the right ventricle was moderately hypertrophied, the left only slightly so. The aortic and mitral valves leaked, but there was no structural change in them or in the pulmonic and tricuspid. Mitral orifice four inches in circumference; aortic not dilated. The endocardium over the posterior wall of left ventricle was thick and white. The muscular substance beneath was pale, glistening, and fibrous, this being most marked on the upper part near the aortic valves. A similar condition was seen in several places in the walls of the left ventricle, and in the right ventricle. Endocardium of both auricles much thickened. Some atheroma of aorta, but no dilatation. Lungs showed signs of chronic congestion, and there was one recent infarct in the left upper lobe towards its base, and abutting on the anterior border. All the organs were chronically congested.

IX.—ULCERATION OF INTESTINE.

1. Male, æt. 29, admitted January 19th. About eighteen months ago was operated on for right strangulated inguinal hernia. Three days ago he was suddenly seized with acute pain in the right iliac region, and since then has passed neither *fæces* nor *flatus*.

On admission, the abdomen was found distended and tympanitic, but no tumour was discovered, and nothing felt by the rectum. The tongue was dry and coated, and he vomited much. A few hours after admission abdominal section was performed in the middle line. There was found to be general peritonitis, with scattered flakes of lymph. In the right iliac region there was a small, localised collection of pus and *fæcal* matter, which communicated with a perforation the size of a florin, of the small intestine, apparently ileum. Across the concavity of this loop of intestine there was a band, which was tied and divided. The peritoneal cavity was washed out with a solution of boracic acid. The perforation was secured to the parietes in the right iliac region, and an artificial anus formed. There was no vomiting after the operation and no abdominal pain. The urine contained a small amount of albumen. The temperature was never higher than 100·2°. He died twenty-three hours after the operation.

Post-mortem examination.—The bowel, which formed the artificial anus was situated eighteen inches above the ileo-cæcal valve. The rupture had occurred in the floor of a large ulcer, which was not of recent origin, for the floor was quite healed over, and the mucous membrane was smooth over it. It was a little depressed below the general level, and its edges were clean-cut, and even though healed, well-defined. In the last few inches of the ileum there were some thinned *aræ* in Peyer's patches, such *aræ* as one finds ulcerated in typhoid fever. The ulcer, which had ruptured, was, however, far larger than those usually seen in this disease. The peritoneum was acutely inflamed, and there were many fibrinous masses, but not much fluid. The intestines were considerably distended.

2. Male, æt. 79, admitted April 6th. Subject to diarrhæa every autumn for four or five years. For the last fourteen months he has had constant pain in the rectum and continuous diarrhæa. He has never passed blood or pus in the stools.

On admission there was found to be considerable spasm of the sphincter ani. About three inches from the anus an annular constriction was felt, which was thought to be probably due to malignant disease. There was frequent action of the bowels, the stools being scanty, fluid, and dark. On two occasions the stricture was dilated by the finger. He died June 13th.

Post-mortem examination.—Here and there in large intestine were a few small losses of substance in the mucous membrane, but there was no serious disease until the rectum was reached. Between two and three inches from the anus there was a large ulcer completely encircling the intestine. It was about an inch and a half broad, and had completely destroyed the mucous membrane, and caused inflammatory thickening of subjacent tissues, together with narrowing of calibre of gut. There was no evidence of its being other than a simple ulcer. No new growth was found either at a distance or immediately around the local disease. The organs generally were atrophied, otherwise healthy.

X.—PERFORATION OF VERMIFORM APPENDIX.

1. Male, æt. 18, admitted May 6th. Seized suddenly eight days before admission with violent pain in abdomen, just above pubes; vomiting set in almost immediately. Bowels not open for five days. There was a history of a similar attack five months previously.

On admission there was much abdominal pain. The walls were rigid, the respiration thoracic. There was no great abdominal tenderness and no fulness in right iliac fossa. Frequent morphia injections were given.

On May 8th he appeared much better, and was nearly free from pain. Next day he became delirious, though he complained of no pain. He died on the morning of May 10th. The bowels were not opened during his stay in the hospital. On the day of his death the temperature was 103°. The preceding three days it was usually normal, though once it rose to 99·4°.

Post-mortem examination.—Small intestine much distended, large collapsed. No general peritonitis. About two to three feet of the lower part of ileum, ending at the valve, were collected in the pelvis on the right side quite collapsed, and united to the walls of the pelvis by recent adhesions. Near the tip of the vermiform appendix there was a small orifice, which lay in the floor of an ulcer, apparently simple in nature. No foreign bodies were present in the appendix. There was a small abscess around the tip of the appendix. The collapsed small intestine contained thick mucus only. There had clearly been obstruction during life.

2. Male, æt. 18, admitted August 10th. Six days before admission was suddenly seized with pain in lower part of belly and vomiting. He continued to do his work until the time of admission.

On admission, the abdomen was rigid and tender, but not acutely so. There was some fulness of lower part of abdomen, and just above the pubes and in the right iliac region there was dulness. Morphia was given hypodermically and turpentine fomentations applied to abdomen.

Next day there was no pain, and the vomiting had ceased. Decided fulness with dulness was present in right side of abdomen. In the evening he became restless and wandered. The temperature rose to 104·4°, the highest previously noted being 103·4°.

On August 12th abdominal section was performed in the middle line. General peritonitis was found, and there was a collection of pus in the cæcal region. The pulse becoming very feeble nothing more was done except to wash out the abdomen with warm boracic solution. A few hours after the operation he became furiously delirious. He died on August 13th. The bowels were not open during his stay in hospital. The temperature throughout was raised, varying from 99·2° to 105°.

Post-mortem examination.—General peritonitis. No collection of pus. The appendix was lacerated nearly through about its mid-length, and in the neighbourhood a concretion was found, which was brown, rather firm, and laminated.

3. Male, æt. 13, admitted September 7th. Seized suddenly six days ago with pain in the hypogastric region, soon followed by vomiting.

On admission the abdomen was found distended, tense and tender, more especially in right iliac and hypogastric regions. He complained much of pain, and

there was severe vomiting. He died next day, September 8th. Temperature varied from 97·6° to 102°.

Post-mortem examination.—There were two or three pints of pus in abdomen and there was general peritonitis. The appendix was the seat of a sloughing process, which had produced several ragged perforations in it. No ulcer could be seen within, or solid body, and none was seen outside it. In the cæcum there were some old, thin, smooth scars, with clean-cut edges. They had been long healed, and resembled most the relics of typhoid fever.

4. Male, æt. 5, admitted November 9th. Suddenly attacked, four days previously, with pain and vomiting. During this time the bowels had been confined.

On admission the abdomen was distended and tympanitic all over. The breathing was thoracic. He vomited incessantly. An hour after admission, abdominal section was performed. Fæcal smelling pus was found, and there was general peritonitis. No perforation detected. The abdomen was washed out with warm boracic solution. He died early on the morning of November 10th.

Post-mortem examination.—There was general peritonitis. The intestines were much distended, except the last few feet of ileum, which were deeply injected, collapsed, and adherent to pelvis. The distal part of the appendix was intensely inflamed, and adherent to the right side of pelvis. On separation, it was found that an oval area, which was adherent, had sloughed, and there was in it a round, pin-hole perforation. A firm, laminated concretion was found in the distal part of the appendix.

XI.—TUBERCULAR MENINGITIS.

Selected fatal case.

Female, æt. 5, admitted May 10th. No history obtained.

On admission the child was comatose; the pupils were equal, much dilated, and immobile. No squint, no optic neuritis. The respirations were irregular, the pulse regular. The knee-jerks were absent, the plantar reflexes fresh. From both ears there was a fætid purulent discharge. The temperature varied from 95° to 97·4° until a few hours before death, when the range was from 100° to 105·6°.

Post-mortem examination.—There was typical basal tubercular meningitis, with distension of ventricles with clear fluid. No abscess of brain. There was chronic otitis media on both sides, and the right mastoid cells contained pus. There was also chronic ostitis of both petrous bones, which had caused considerable condensation. The ossicles on both sides were diseased. Miliary tubercles were found in abundance in the lungs and sparsely in the liver.

XII.—ALCOHOLIC PARALYSIS.

Fatal case.

Female, æt. 39, admitted August 27th. Father intemperate, died of phthisis. For three years patient had been drinking excessively, chiefly gin. In 1886

she was in the hospital for alcoholic paralysis, and was discharged relieved. Three months before the present admission she began to refuse food, and became suspicious.

On admission she was constantly chattering, addressing absent friends. She would sometimes stop to seize an imaginary insect or to strike at flies in the air. When spoken to, she would often answer correctly. The evacuations were passed into the bed. The hands were fairly steady, but the grasp rather feeble. Both hands were dropped and could not be extended. There was no marked wasting of the arms, no tenderness, and no loss of sensation. In the legs there was much loss of power, the patient being quite unable to stand. The calf muscles were small. There was some muscular tenderness and some impairment of sensation in both legs. The knee-jerks and plantar reflexes were absent. The pupils were equal and active; no oculo-motor paralysis. No affection of cranial nerves. Lungs apparently normal. Edge of liver not felt.

On September 6th a sloughing bedsore was noted to be present over the sacrum, and over the left external malleolus and over the dorsum of the left foot there were bruise-like areas.

On November 30th it was noted that all the muscles had become smaller since admission, and that many were almost completely paralysed. The fingers were semiflexed at the phalangeal joints, and extended at the metacarpo-phalangeal. The extensors on the back of the forearms were much atrophied, the wrists were dropped, and the patient had no power of extension. The muscles of the legs also were much atrophied, the extensors more so than the flexors. There was almost total loss of movement. She died on December 28th. The temperature throughout was raised, sometimes 3° or 4°, the pyrexia being probably related to the bedsores.

Post-mortem examination.—Various nerves were examined, but no change was seen. The spinal cord and brain seemed normal. The apex of the left lung was consolidated, and showed some areas of excavation. The liver was very fatty.

SURGICAL REPORT.

1887.

BY CHARLES A. BALLANCE.

Preface.

THE present report has been prepared on the same lines as that of 1886.

During operations carbolic lotion $2\frac{1}{2}$ or 5 per cent. has almost invariably been used for disinfection.

Sublimate solution and chloride of zinc have occasionally been employed.

The spray has been used in almost all abdominal operations and in some others.

The dressings have been usually composed of a combination of iodoform gauze and salicylic wool. The innermost layer of a dressing has been as a rule wrung out in $2\frac{1}{2}$ per cent. carbolic lotion. Sometimes, however, it has been applied dry.

Iodoform powder has been in much favour for dusting on wounds.

Boracic acid solution at 100° F. has been used for irrigating the abdominal cavity, and carbolic acid solution for washing out purulent collections in joints.

Cotton-wool mops, wrung out in $2\frac{1}{2}$ per cent. carbolic lotion, have extensively replaced sponges, and especially has a preference been given to them, whenever, as in operative procedures on the veins, suppuration or other septic troubles give rise to more than the usual amount of danger.

Cases of erysipelas arising in the hospital have been considerable in number. They have been most numerous in Block 3, and in Albert and Edward Wards.

Among the many cases during the year presenting special points of interest are the following :

1. A case of rupture of the small intestine successfully treated by abdominal section. The patient died subsequently after the operation of resection of the bowel for the cure of the artificial anus.

2. A case of dislocation of the internal semilunar cartilage of the knee treated by excision.

3. A case in which a ruptured spleen was excised. The patient died.

4. A case of arterio-venous aneurysm.

5. A case of extroversio vesicæ in which division of the sacro-iliac synchondroses was performed.

6. A case in which an osteoplastic resection of the foot (for disease) after the method of Mickulicz was done.

7. A case in which an osteoid sarcoma of the lower end of the femur (periosteal in origin) had involved the medullary cavity as high as the small trochanter.

8. A case of epithelioma of the kidney secondary to calculus pyelitis.

9. A case in which the common femoral artery was ligated with a clove hitch of tendon without rupture of the coats.

10. A case of ovarian tumour complicated by pregnancy which was unaffected by the operation of ovariectomy.

11. Two cases of acute fatal tetanus in connection with which some experiments on the infectivity of the disease were carried out.

12. The series of supra-pubic cystotomies for calculus and tumour are especially noticeable. The number of cases is large and indicates the continued and increasing popularity of the supra-pubic operation.

13. A case of laparotomy for supposed perforation of a gastric ulcer occurred in a medical ward. Some lymph was found in the neighbourhood of the neck of the gall-bladder and duodenum but no perforation was discovered. The "toilette" of the peritoneum was carefully made and the patient recovered.

14. Finally, perhaps, attention may be drawn to the improvement which has taken place in the lung condition of patients suffering from tubercular disease of some joint and phthisis, when the local articular affection has been completely removed by amputation (*vide* the series of cases of amputation of the thigh for tubercular arthritis of the knee, and others).

NOTE.—It has been found impossible in this Report, to record the *Museum Catalogue references* to all the surgical material, which was collected by the Curator during 1887; and which has been or will be added to the pathological section of the Museum.

I should like to thank my brother John Ballance, now Resident Accoucheur, for the invaluable aid I received from him in the preparation of this report, especially of the statistical portion.

May, 1888.

General Statement.

Number of surgical beds	241
„ of patients in hospital, midnight, 1886-7	395
„ of surgical patients in hospital, midnight, 1886-7	$\left\{ \begin{array}{l} \text{Males} \quad 137 \\ \text{Females} \quad 84 \end{array} \right\} = 221$
„ of patients in hospital, midnight, 1887-8	383
„ of surgical patients in hospital, midnight, 1887-8	$\left\{ \begin{array}{l} \text{Males} \quad 126 \\ \text{Females} \quad 80 \end{array} \right\} = 206^1$
„ „ „ treated to a termination during the year 1887	2389 ²

	Total.		Males.		Females.
Discharged cured	1628	...	1102	...	526
„ relieved	535	...	321	...	214
„ unrelieved	49	...	31	...	18
Died	177	...	108	...	69
	<u>2389</u>	...	<u>1562</u>	...	<u>827</u>

Average number of deaths 7·41 per cent.³
 „ „ days in hospital 30·75.
 (not including the ophthalmic cases).

¹ Victoria Ward nearly empty.
² Total, including ophthalmic cases, 2630.
³ Many cases died on the day of admission.

TABLE I.—*Abstract, showing Diseases in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							Chronic.	Not reported.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12			
GENERAL DISEASES.																			
Erysipelas	37	21	9	1	5	10	7	15	6	5	28	10	2	...	...	...	18	
Pyæmia	2	1	...	...	1	...	...	2	...	...	...	1	...	1	...	...	1	
<i>Syphilis</i> —																			
<i>a.</i> Primary	1	2	...	...	2	...	...	...	...	1	...	...	...	...	3	...	...
<i>b.</i> Secondary . . . . .	...	27	...	...	12	15	...	...	...	...	...	...	3	20	1	...	3	
<i>c.</i> Tertiary	8	5	...	...	2	5	4	2	...	...	...	...	...	3	3	4	3	
Tetanus	2	...	...	...	...	...	1	...	1	...	...	2	...	...	...	...	...
Rickets . . . . .	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	
LOCAL DISEASES.																			
<i>Carcinoma</i> —																			
<i>a.</i> Scirrhus of breast . . . . .	...	31	...	...	...	...	6	8	9	8	...	...	...	1	8	8	13	1
<i>b.</i> Do. (recurrent) . . . . .	...	10	...	...	...	...	...	1	6	3	...	...	...	1	2	2	4	1
<i>c.</i> Lower jaw	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
<i>d.</i> Palate . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	
<i>e.</i> Skin . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
<i>f.</i> Rectum	3	6	...	...	...	...	2	3	...	4	...	...	...	1	2	2	4	...
<i>g.</i> Oesophagus	2	1	...	...	...	...	...	...	1	2	...	...	...	...	...	1	1	1
<i>h.</i> Cervical glands	3	...	...	...	...	...	...	...	2	1	...	...	...	...	...	1	1	1
<i>i.</i> Pylorus . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
<i>j.</i> Peritoneum . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
<i>k.</i> Bladder	3	2	...	...	...	...	1	...	...	4	...	...	...	...	...	1	4	...
<i>Epithelioma</i> —																			
<i>a.</i> Inguinal glands	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
<i>b.</i> Finger . . . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
<i>c.</i> Upper jaw	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
<i>d.</i> Kidney	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
<i>e.</i> Bladder	4	...	...	...	...	...	...	2	1	1	...	...	...	...	...	...	4	...
<i>f.</i> Tongue	11	4	...	...	...	...	...	2	4	9	...	...	...	2	6	5	1	1
<i>g.</i> Rectum	1	1	...	...	...	...	...	1	1	...	...	...	...	...	...	2	...	...
<i>h.</i> Nose	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
<i>i.</i> Tonsil and pharynx	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
<i>j.</i> Cheek	5	1	...	...	...	...	1	3	1	1	...	...	...	2	1	2	1	...
<i>k.</i> Lip	6	...	...	...	...	...	...	...	1	5	...	...	...	...	3	1	2	...
<i>l.</i> Scalp and skull	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
<i>m.</i> Skin . . . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
<i>n.</i> Lower jaw	3	...	...	...	...	...	1	1	...	1	...	...	...	...	...	2	1	...
<i>o.</i> Penis	2	...	...	...	...	...	...	1	1	...	...	...	...	...	1	1	...	...

according to authorised Nomenclature.

Duration of residence.										Result.				Remarks.
D.s. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 3-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
3	18	23	8	4	2	...	...	...	50	1	1	6	3 readmissions. 1 would not submit to treatment.
2	...	...	1	...	...	...	...	...	...	...	...	3	
...	1	2	...	...	...	...	...	...	3	...	...	...	2 with roseola.
...	...	9	13	4	1	...	...	...	22	5	...	...	4 readmissions. Several with gonorrhœa; 1 with atresia vaginæ; 1 with gonorrhœal rheumatism.
...	6	4	3	...	...	...	...	...	6	6	...	1	Pneumonia.
1	1	...	...	...	...	...	...	...	...	...	...	2	See Special Summary.
...	1	...	...	...	...	...	...	...	...	1	...	...
1	2	16	12	...	...	...	...	...	24	5	1	1	1 refused operation; 2 advised against operation. 4 transferred for erysipelas.
1	1	3	5	...	...	...	...	...	5	5	...	...	7 readmissions: 1 from 1883; 1 for the third time. 1 two operations previously.
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
1	4	2	...	2	...	...	...	...	2	1	6	1	1 went out against advice.
1	...	1	...	1	...	...	...	...	...	1	2	...	
1	2	...	...	...	...	...	...	...	...	3	...	...	1 readmission. 1 operation refused.
...	...	1	...	...	...	...	...	...	...	1	...	...	Husband declined operation.
...	...	...	1	...	...	...	...	...	...	1	...	...	? Carcinoma; possibly sarcoma.
...	3	...	1	1	...	...	...	...	...	1	...	4	1 male, nature doubtful, possibly sarcoma.
...	...	...	1	...	...	...	...	...	...	1	...	...	Readmission after removal of penis.
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	...	...	...	1	
1	...	...	...	...	...	...	...	...	...	...	...	1	And calculus pyo-nephrosis. See 'Path. Soc. Trans.,' vol. xxxix.
...	...	...	3	1	...	...	...	...	1	2	1	...	1 readmission.
2	1	9	3	...	...	...	...	...	7	2	5	1	1 readmission. 2 with floor of mouth involved; 1 with soft palate. 1 advised against operation.
...	...	1	1	...	...	...	...	...	...	1	1	...	
...	...	...	1	...	...	...	...	...	...	1	...	...
...	1	4	1	...	...	...	...	...	4	...	2	...	1 readmission.
...	2	3	1	...	...	...	...	...	5	1	...	...	2 recurrent.
...	...	1	...	...	...	...	...	...	...	1	...	...	Readmission.
...	...	1	...	...	...	...	...	...	...	1	...	...	Femoral glands involved. See 'Lancet,' 1888.
...	1	1	1	...	...	...	...	...	2	...	1	...	2 with floor of mouth and glands involved 1 large portion of jaw removed.
...	...	...	2	...	...	...	...	...	2	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	2	...	...	...	...	...	...	2	1	...	...
1	1	...	...	...	...	...	...	...	...	...	1	1	
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	3	...	...	...	...	...	3	...	...	1	1 readmission.
...	...	...	...	1	...	...	...	...	...	...	...	1	Post. nasal region and cervical glands involved.
...	1	...	...	...	...	...	...	...	...	...	...	1	
...	...	...	1	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	...	...	1	...	
...	...	...	1	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	...	1	...	...	Readmission.
...	...	1	...	...	...	...	...	...	...	...	...	1	
...	...	...	...	1	...	...	...	...	1	...	...	...	Melanotic.
...	...	...	...	3	...	...	...	...	3	...	...	...	1 readmission. See 'Clin. Soc. Trans.,' vol. xxi, for 1 case.
...	...	...	1	...	...	...	...	...	1	...	...	...
1	1	...	...	...	...	...	...	...	2	...	...	...
...	1	1	1	...	...	...	...	...	3	...	...	...	1 recurrent. 1 central necrosis as well, see 'Path. Soc. Trans.,' vol. xxxix.
...	1	...	...	...	...	...	...	...	...	...	1	...	Supposed to be of kidney. Left hospital suddenly of own accord.
...	...	...	...	...	1	...	...	...	...	1	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...
1	1	1	1	...	...	...	...	...	2	2	...	...	2 readmissions.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	7	3	...	...	...	...	...	10	...	...	...	1 transferred for erysipelas.
...	1	2	...	...	...	...	...	...	3	...	...	...
...	3	2	...	1	1	...	...	...	1	5	1	...	1 refused operation. 1 hysterectomy, successful.
...	1	...	...	...	1	...	...	1	1	2	1	...	1 readmission. 2 transferred for scarlet fever.
...	1	...	...	...	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	Readmission.
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...
...	2	1	...	...	...	...	...	...	3	...	...	...	All of mamma.
...	1	1	1	...	...	...	...	...	2	...	...	1	Vide 'Lancet,' July 9th, 1887, for 2 cases cured.
...	...	3	...	...	...	...	...	...	3	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	...	2	1	...	...	...	...	...	2	1	...	...	Recurrent; same case.
...	...	...	1	...	...	...	...	...	1	...	...	...	Removed by dental drill.
...	2	1	...	...	...	...	...	...	3	...	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...
1	...	1	1	...	...	...	...	...	1	2	...	...	1 readmission.
...	1	...	...	...	...	...	...	...	1	...	...	...	...
...	...	...	...	1	...	...	...	...	...	1	...	...	Cirroid aneurysm.
...	3	1	1	1	1	...	...	...	2	3	1	1	1 sent out, scarlet fever in ward.
...	...	1	...	...	...	...	...	...	1	...	...	...	...
1	...	...	...	...	...	...	...	...	...	1	...	...	...
...	...	2	...	...	...	...	...	...	2	...	...	...	1 mucous; 1 serous.
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	Bursal.
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	...	3	...	...	...	...	...	...	3	...	...	...	...
1	1	...	...	...	...	...	...	...	1	...	1	...	1 would not submit to operation.
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	5	4	6	3	...	...	...	...	11	1	...	6	1 pregnant. 1 transferred to Charity, and then back again to Alexandra.
...	...	...	1	...	...	...	...	...	1	...	...	...	Readmission.
...	...	1	...	...	...	...	...	...	...	1	...	...	Abscess of neck.
...	...	1	...	...	...	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	After excision of tonsils.
...	1	...	...	...	...	...	...	...	1	...	...	...	Right side. See also New Growths.
...	1	...	1	...	...	...	...	...	...	2	...	...	1 readmission; after scarlet fever.
...	...	1	...	...	...	...	...	...	1	...	...	...	Penny removed by coin catcher.
2	2	...	2	...	...	...	...	...	2	3	...	1	See Special Table.
4	3	2	7	1	...	...	...	...	7	9	...	1	...
9	5	4	6	1	...	...	...	...	19	...	...	6	...
...	...	...	2	...	...	...	...	...	2	...	...	...	...
...	...	1	1	...	...	...	...	...	...	2	...	...	...
3	4	7	4	1	...	...	...	...	14	...	...	5	...
1	3	...	...	...	...	...	...	...	...	4	...	...	...
1	...	...	1	...	...	...	...	...	1	...	...	1	...

TABLE I.—Abstract, showing Diseases in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not re- ported
DIGESTIVE SYSTEM—continued.																		
Intestinal colic . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
„ obstruction	3	...	...	...	...	...	1	1	...	1	1	...	...	...	...	...	1	...
Artificial anus . . . . .	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Peritonitis, chronic	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
„ acute	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Stricture of rectum . . . . .	...	6	...	...	...	6	...	...	...	...	...	...	...	...	...	...	6	...
Ulcer of rectum	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Anal abscess	2	...	...	...	...	1	1	...	...	...	...	1	...	1	...	...	...	...
Prolapsus ani	2	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2
Fissure of anus . . . . .	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	2	...	...
Fistula in ano	25	5	...	...	1	8	11	6	2	2	...	1	1	6	7	5	6	4
Hæmorrhoids	18	9	...	...	...	2	10	9	6	...	...	...	...	...	2	5	13	7
GENITO-URINARY SYSTEM.																		
Orchitis	3	...	...	1	1	1	...	...	...	...	1	...	...	1	...	...	...	1
„ testicle undescended	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Tubercle of testis	3	...	1	...	...	2	...	...	...	...	...	...	...	1	1	...	1	...
Balanitis and posthitis	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Hydrocele	10	...	...	...	2	1	1	2	4	...	...	...	...	...	...	1	7	2
Varicocele	17	...	...	...	6	11	...	...	...	...	...	...	...	...	2	4	4	7
Phimosis	7	...	...	1	4	1	1	...	...	...	...	...	...	1	...	...	6	...
Warts	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Non-infecting chancre	6	...	...	...	3	3	...	...	...	...	2	2	2	...	...	...	...	...
Gonorrhœal rheumatism . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Endometritis . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Endocervicitis . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Labial abscess . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Gonorrhœa . . . . .	...	37	...	...	32	5	...	...	...	...	...	1	12	7	6	5	2	4
Old damage to septum (recto-vaginal) . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Chronic inflam. of breast . . . . .	...	4	...	...	...	4	...	...	...	...	...	1	2	...	...	1	...	...
Mammary abscess . . . . .	...	6	...	...	...	3	2	1	...	...	...	...	1	1	3	...	...	1
Ovaritis . . . . .	...	3	...	...	1	1	1	...	...	...	...	...	...	...	...	...	2	1
Urethral caruncle . . . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
„ stricture	45	...	...	...	1	5	14	10	13	2	...	...	...	5	7	4	17	12

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	...	...	...	...	...	...	...	1	...	...	...	Readmission; after herniotomy 6 months ago.
2	...	...	1	...	...	...	...	...	1	...	...	2	Readmission.
...	...	...	1	...	...	...	...	...	1	...	...	...	Localised tubercular? transferred to Arthur.
...	1	...	...	1	...	...	...	...	...	...	...	1	Trauma. P.M.—Ulceration of appendix $\frac{1}{2}$ inch from cæcum; appendix separated from cæcum; general acute peritonitis.
...	...	2	3	...	...	1	...	...	4	2	...	...	1 case readmitted twice. 1 transferred for scarlet fever.
...	...	...	1	...	...	...	...	...	...	1	...	...	Ischio-rectal abscess; transferred for erysipelas.
...	2	...	...	...	...	...	...	...	2	...	...	...	1 transferred to Arthur; aortic regurgitation.
1	...	1	...	...	...	...	...	...	1	...	...	1	1 with small external hæmorrhoids.
...	2	...	...	...	...	...	...	...	2	...	...	...	1 readmission; 1 ischio-rectal abscess; 1 multiple; 1 delayed healing owing to recurrent attacks of inflammation; 1 discharged unrelieved.
1	9	13	7	...	...	...	...	...	26	3	1	...	1 transferred for erysipelas; 1 secondary hæmorrhage; 3 refused treatment, 1 of whom had incised himself.
1	6	18	2	...	...	...	...	...	18	6	3	...	1 readmission.
...	1	...	...	...	...	...	...	...	3	...	...	...	In inguinal canal+hernia.
...	...	...	3	...	...	...	...	...	2	1	...	...	2 readmissions. 2 testis; 1 epididymis. 1 phthisis had other testicle removed before.
...	1	...	...	...	...	...	...	...	1	...	...	...	1 readmission. 1 injury to testicle.
1	1	2	6	...	...	...	...	...	8	2	...	...	1 had undergone two operations before.
...	1	8	8	...	...	...	...	...	17	...	...	...	1 albuminuria.
1	4	2	...	...	...	...	...	...	7	...	...	...	All treated with HNO ₃ .
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
1	5	20	6	4	1	...	...	...	34	2	1	...	1 refused treatment. 2 readmissions. 2 discharged for misconduct. 1 miscarriage in hospital.
...	...	...	1	...	...	...	...	...	1	...	...	...	Readmission. Plastic operation successfully performed.
...	2	2	...	...	...	...	...	...	2	2	...	...	1 transferred for erysipelas.
1	1	...	3	1	...	...	...	...	2	4	...	...	See Summary of fatal cases.
...	...	...	1	2	...	...	...	...	1	...	...	2	Malignant of bladder later.
3	7	15	15	3	2	...	...	...	34	8	1	2	4 fistulæ. 4 readmissions. 1 refused operation. 1 with malignant disease of rectum; 1 tabes and atony; and 1 with ulcerative endocarditis.

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	Readmission.
4	5	...	...	...	...	...	...	...	...	6	1	...	2	See Summary of fatal cases.
...	...	1	...	...	...	...	...	...	...	...	...	...	1	No post-mortem.
...	...	1	4	...	1	...	...	...	...	3	1	1	1	1 readmission. 1 phthisis. 1 transferred to ophthalmic. 1 after supra-pubic cystotomy. 1 discharged at own request.
...	7	2	3	...	...	...	...	...	...	3	8	1	...	1 discharged for misconduct. 1 with rectovesical fistula.
...	5	2	...	...	1	...	...	...	...	4	3	...	1	3 readmissions; 1 for the 10th time.
...	...	...	...	1	...	...	...	...	...	1	...	...	...
...	1	1	...	1	1	...	...	...	...	2	2	...	...
...	4	4	6	2	1	...	...	...	...	13	1	1	2	1 readmitted for 6th time. 1 refused operation. 1 twice transferred for scarlet fever. 1 rectovesical fistula; 1 prostatic tumour pedunculated.
...	1	1	...	...	...	...	...	...	...	1	...	...	1	
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Readmission.
...	1	...	...	...	...	...	...	...	...	...	1	...	...
...	...	2	...	...	...	...	...	...	...	...	1	1	1	1 tubercular ovary, see Museum, F.F.51 ¹ and 'Path. Soc. Trans.,' 1889.
...	...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	1	1	...	...	...	...	...	...	2	...	...	...
...	...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Went out dying of phthisis.
1	1	1	...	1	...	1	1	...	...	3	2	...	1	
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Transferred for erysipelas.
...	...	2	1	...	...	...	...	...	...	2	1	...	...	1 readmission.
1	1	1	...	...	...	...	...	...	...	3	...	...	...	1 transferred to St. Thomas's Home.
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Transferred for scarlet fever.
...	1	...	...	...	...	...	...	...	...	...	1	...	...
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Probably necrosis of ilium.
...	...	1	...	...	...	...	1	...	...	...	2	...	...
...	...	...	1	...	...	...	...	...	...	1	1	...	...	1 readmission.
...	...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	...	...	1	...	...
...	...	...	...	1	...	...	...	...	...	...	1	...	...
...	...	...	...	1	...	...	...	...	...	...	1	...	...

TABLE I.—Abstract, showing Diseases in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys.	Dys.	Wks	Mts.	Mts.	Mts.	Chronic.	Not re-ported.
											1-4	5-13	2-4	1-2	2-6	6-12		
OSSEOUS SYSTEM—continued.																		
Necrosis—																		
a. Tibia	9	2	2	4	2	1	...	...	1	1	...	...	2	...	4	...	...	5
b. Radius	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...
c. Tarsus	3	1	...	...	3	...	...	1	...	...	...	...	...	1	1	2	...	...
d. Femur	5	2	...	1	1	3	2	...	...	...	...	...	1	...	1	2	3	...
e. Metacarpus	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
f. Rib . . . . .	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
g. Malar bone	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
h. Fibula	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
i. Tuber ischii . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
j. Inferior maxilla	3	...	1	...	...	...	2	...	...	...	...	...	2	...	...	1	...	...
k. Temporal fossa	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
l. Metatarsus	2	5	...	1	1	1	1	1	1	1	...	...	...	1	2	...	2	2
m. Thigh stump	3	...	...	...	1	...	1	1	...	...	...	...	1	...	...	...	...	2
n. Leg stump	2	...	...	...	1	...	1	...	...	...	1	...	...	1	...	...	...	...
Caries of—																		
a. Tibia	1	3	1	1	1	...	...	...	1	...	...	...	1	...	...	...	2	1
b. Hand and foot	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
c. Frontal boue . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
d. Metatarsus	2	...	...	...	1	...	1	...	...	...	...	...	...	1	1	...	...	...
e. Metacarpus	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
f. Rib	2	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2
g. Great trochanter . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
h. Sternum . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
i. Mastoid process	3	1	3	...	1	...	...	...	...	...	...	...	...	1	...	...	1	2
j. Ostitis media	2	2	2	...	...	...	1	...	...	1	...	1	...	2	...	...	1	...
k. Tarsus	12	6	2	2	10	...	2	1	1	...	...	...	...	7	...	3	2	6
DISEASES OF JOINTS.																		
Arthritis—																		
a. Multiple	2	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...
b. Elbow	5	3	...	...	6	1	...	...	...	1	...	...	...	2	...	...	5	1
c. Wrist	2	2	...	...	1	1	1	...	...	1	...	...	...	...	4	...	...	...
d. Hip	37	26	13	18	20	10	2	...	...	...	...	1	...	6	7	8	25	18
e. Sacro-iliac . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
f. Knee	16	14	3	5	9	9	2	2	...	...	...	...	3	1	5	4	9	8
g. Ankle	8	3	1	...	6	1	1	2	...	...	...	...	...	...	3	4	3	1
h. Metatarso-phalangeal	3	1	...	...	1	...	1	1	1	...	...	...	...	3	...	1	...	...
Puerperal arthritis—																		
a. Multiple . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
b. Knee . . . . .	...	2	...	...	1	1	...	...	...	...	...	...	1	1	...	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
4-5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	5	4	...	...	1	...	...	...	8	3	...	...	4 readmissions.
1	...	1	...	...	...	...	...	...	1	1	...	...
...	...	1	3	...	...	...	...	...	2	2	...	...	1 readmission. 1 transferred for erysipelas.
...	3	2	1	1	...	...	...	...	4	3	...	...	1 readmission. 1 transferred for erysipelas.
1	...	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	...	...	1	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	1 readmission.
1	1	...	1	...	...	...	...	...	1	2	...	...	1 readmission. 1 transferred for erysipelas.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	2	4	...	...	...	...	...	6	...	1	...	1 readmission. 1 transferred for scarlet fever.
...	...	3	...	...	...	...	...	...	2	1	...	...	3 readmissions.
1	...	1	...	...	...	...	...	...	2	...	...	...
...	...	1	3	...	...	...	...	...	2	2	...	...	2 readmissions.
...	...	...	...	1	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...
...	1	1	...	...	...	...	...	...	1	1	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
2	...	...	...	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...
...	1	1	...	...	...	...	...	...	1	3	...	...	1 readmission.
...	2	2	...	...	...	...	...	...	1	3	...	...	1 transferred for chicken-pox.
2	1	9	2	2	1	...	...	...	9	9	...	...	3 readmissions. 1 would not submit to operation. 2 transferred for erysipelas. 1 Mickulicz's operation, see 'Med. Soc. Trans.,' vol. xi.
1	...	...	...	...	...	1	...	...	2	...	...	...
1	2	1	4	...	...	...	...	...	4	3	1	...	1 discharged for misconduct.
...	1	1	2	...	...	...	...	...	2	2	...	...
7	9	16	12	4	9	4	...	...	6	56	1	...	18 readmissions. 1 transferred from Arthur; 1 transferred from Charity; 1 transferred for scarlet fever; 1 transferred for erysipelas. 1 with rōtheln; 1 with lupus of ankle and knee.
...	...	1	...	...	...	...	...	...	...	1	...	...
6	7	9	5	...	3	...	...	...	10	18	1	1	3 readmissions. 2 refused treatment. 1 transferred for erysipelas. 1 tubercular meningitis.
1	...	3	3	4	...	...	...	...	5	6	...	...	1 readmission.
1	2	...	...	1	...	...	...	...	3	...	1	...	1 refused treatment.
...	...	1	...	...	...	...	...	...	...	1	...	...
...	1	1	...	...	...	...	...	...	1	1	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	...	2	1	...	...	...	...	...	3	...	...
...	...	...	1	...	...	...	...	...	...	1	...	...
...	2	1	...	1	1	...	...	...	...	4	1	...	All readmissions.
...	2	...	...	...	...	...	...	...	...	2	...	...	1 readmission.
...	...	...	1	...	...	...	...	...	...	1	...	...	Readmission.
...	...	...	1	1	...	...	...	...	...	2	...	...	1 transferred from Arthur.
...	1	1	...	1	1	...	...	...	...	1	3	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	Readmission.
...	3	2	1	1	...	...	...	...	...	3	3	1	1 readmission. 1 refused treatment.
...	2	1	...	...	...	...	...	...	...	2	1	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	Similar loose body removed from other knee previously.
...	1	...	2	...	...	...	...	...	...	1	2	...	See 'Clin. Soc. Trans.,' vol. xxi, for 1 case successfully removed.
2	5	6	1	1	...	...	...	...	...	3	12	...	4 readmissions.
...	...	...	1	...	...	...	...	...	...	...	1	...	
...	2	1	1	...	...	...	...	...	...	2	2	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	
...	...	...	2	3	...	...	...	...	...	5	...	...
...	...	1	...	...	...	...	...	...	...	...	...	...	1
...	5	2	3	...	...	1	...	...	...	10	...	1	2 readmissions. 1 transferred for erysipelas.
...	...	1	...	...	...	1	...	...	...	1	...	...	1
...	...	3	4	8	3	2	1	...	...	3	14	...	4 1 transferred for diphtheria; 1 transferred for scarlet fever. For 2 cases treated by lumbar incision, see 'Med. Soc. Trans.,' vol. xi, and 'Lancet,' Dec. 24th, 1887.
...	...	1	...	...	...	...	...	...	...	...	...	...	1 Readmission.
...	1	...	...	...	...	...	...	...	...	...	1	...	
1	...	2	3	...	...	...	...	...	...	5	1	...	
1	9	11	2	1	...	...	...	...	...	24	...	...	1 transferred for erysipelas. 1 suppuration of semi-membranosus bursa and of knee-joint; and thigh was amputated.
...	...	1	...	...	...	...	...	...	...	...	1	...	

according to authorised Nomenclature—continued.

Duration of residence.								Result.				Remarks.
s. Dys. 4-5-13	Wks 2-4	Mts 1-2	Mts 2-4	Mts 4-6	Mts 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
	3	...	1	1	...	...	...	2	2	...	1	1 readmission. 1 transferred to Charity. See 'B. M. J.,' Oct. 1, 1887, for popliteal aneurysm. See 'Lancet,' 1888.
4	...	9	3	3	...	...	...	17	1	...	1	1 readmission. 1 admitted with hæmorrhage. 2 transferred for erysipelas and 1 for scarlet fever.
	4	5	...	...	...	...	...	5	3	...	1	1 from a tooth extracted.
4	9	7	3	...	...	...	...	17	4	...	2	
	1	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	1	...	...	...	Hæmophilia ?
	...	4	2	...	...	...	...	5	1	...	...
	...	...	...	1	1	...	...	1	1	...	...
1	6	6	1	...	...	...	...	9	5	...	...	Probably all or nearly all strumous. 1 readmission. 1 pneumonia. See also cases of abscess.
	4	1	2	...	...	...	...	4	3	...	...	3 readmissions.
1	1	1	...	...	...	...	...	2	1	...	...
	1	1	...	1	...	...	...	3	...	...	...	For nerve stretching (in 1 case), see 'Clin. Soc. Trans.,' vol. xx.
	...	1	1	...	...	...	...	1	1	...	...
	...	1	...	...	...	...	...	...	1	...	...
	...	1	...	...	...	...	...	...	1	...	...
	...	1	...	...	...	...	...	...	1	...	...
	...	1	2	1	...	...	...	4	...	...	...	1 readmission.
	...	2	...	...	...	...	...	1	1	...	...	1 readmission.
	...	1	...	...	...	...	...	...	1	...	...
	...	1	1	...	...	...	...	...	2	...	...	1 readmission.
	...	1	1	...	...	...	...	...	2	...	...	1 readmission.
	...	...	1	...	...	...	...	1	...	...	...	Following fracture and injury to musculo-spiral; amputation.
	...	2	...	...	...	...	...	...	2	...	...
	...	...	1	...	1	...	...	2	...	...	...
	...	4	3	...	...	1	...	4	4	...	...	1 with pes cavus also.

TABLE I.—Abstract, showing Diseases in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							Chronic.	Not reported.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12			
DEFORMITIES AND MALFORMATIONS—continued.																			
Talipes equino-varus	1	3	2	...	1	1	...	...	...	...	...	...	...	...	...	...	4	...
„ varus	2	2	2	1	...	1	...	...	...	...	...	...	...	...	...	...	4	...
Hammer-toe	6	3	...	...	6	2	1	...	...	...	...	...	...	1	...	...	4	4
Dupuytren's finger	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Claw-foot	2	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	2	...
Flat-foot	2	1	...	...	...	3	...	...	...	...	...	...	...	...	...	...	1	2
Genu valgum	4	2	...	1	5	...	...	...	...	...	...	...	...	...	1	...	2	3
Undescended testicles	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Conical stump	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Flail-joint	1	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	1
Curved tibia . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Deformity of foot	2	1	...	...	2	...	1	...	...	...	...	...	...	...	...	...	1	2
„ toe	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2
Cicatricial cont. of thumb	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...
Contracted finger	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Cicatricial cont. of neck	4	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	3	1
„ eyelid	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
„ hand	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
„ fingers.	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Faulty union of—																			
a. Bones of leg	5	...	...	...	...	1	3	1	...	...	...	...	...	...	3	2	...	...
b. Tibia	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
c. Radius	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
d. Patella	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
Single harelip	3	6	9	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...
Double harelip	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Cleft palate	2	6	1	3	4	...	...	...	...	...	...	...	...	...	...	...	8	...
Spina bifida	2	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
Ectopion of bladder	2	1	...	2	...	...	1	...	...	...	...	...	...	...	...	...	3	...
Imperforate anus	5	1	6	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...
Atresia narium	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
SKIN AND CELLULAR TISSUE.																			
Abscess—																			
a. Scalp	2	...	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...
b. Post-pharyngeal	1	...	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...
c. Neck	18	6	4	4	4	7	4	1	...	1	1	3	3	3	3	3	2	8	
d. Shoulder	3	...	2	1	...	...	...	...	...	...	...	3	...	...	...	...	...	...
e. Axilla	7	3	3	...	1	6	...	...	...	...	...	5	...	...	...	...	...	5

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	1	...	...	...	...	2	...	2	2	...	...
...	1	1	...	2	...	...	...	...	1	3	...	...
...	1	5	3	...	...	...	...	...	7	2	...	...	1 with pes cavus also.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	1	...	1	...	...	...	...	...	...	2	...	...
...	...	1	2	...	...	...	...	...	...	3	...	...	2 readmissions.
...	...	...	1	3	2	...	...	...	6	...	...	...	1 case genu valgum right, genu varum left.
1	...	...	...	...	...	...	...	...	...	1	...	...	1 readmission.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	...	2	...	...	...	...	...	...	2	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...
...	...	2	...	1	...	...	...	...	2	1	...	...	1 congenital; 2 infantile paralysis.
...	...	2	...	...	...	...	...	...	2	...	...	...	1 after gunshot wound; 1 from planing machine injury.
...	...	...	1	1	...	...	...	...	2	...	...	...	After injury with chisel.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	1	...	1	2	...	...	...	...	4	...	...	1 readmission.
...	...	1	...	...	...	...	...	...	...	1	...	...	Readmission.
...	...	...	...	1	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	...	1	...	...	...
1	2	...	1	1	...	...	...	...	1	4	...	...
...	...	...	...	1	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	...	...	...	1	...	...	...	1	...	...	...
...	1	8	...	...	...	...	...	...	5	4	...	...	1 readmission. 2 with cleft palate also. 1 condition too bad for operation. 1 pneumonia.
...	1	1	...	...	...	...	...	...	...	1	...	1	1 readmission. 1 with cleft palate also.
1	1	3	3	...	...	...	...	...	1	7	...	...	1 had undergone operation for harelip.
1	1	1	...	...	...	...	...	...	...	...	...	3	
...	1	1	...	...	...	1	...	...	...	3	...	...	1 readmission. See 'Med.-Chir. Trans.,' vol. lxx, for treatment by division of sacro-iliac joints, &c.
3	1	1	1	...	...	...	...	...	3	...	3	...	1 with harelip, cleft palate, and developed erysipelas (not transferred).
...	...	1	...	...	...	...	...	...	1	...	...	...	Congenital syphilis.
...	...	...	...	...	...	...	...	...	...	...	...	...	Some cases scraped, see Table III.
...	2	...	...	...	...	...	...	...	2	...	...	...	1 readmission.
...	...	1	...	...	...	...	...	...	1	...	...	...
1	10	9	3	1	...	...	...	...	14	10	...	...	2 transferred for erysipelas.
...	2	...	1	...	...	...	...	...	2	1	...	...
1	1	7	1	...	...	...	...	...	9	1	...	...	1 readmission. 1 transferred for erysipelas.

according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	...	1	1	...	...	...	...	...	2	...	...	...	1 readmission.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	2	1	1	1	...	...	...	...	3	1	...	1	1 readmission.
...	...	...	1	1	...	...	...	...	...	...	...	2	
1	2	1	...	...	1	...	...	...	2	2	1	...	1 readmission. 1 would not submit to treatment.
2	3	3	1	...	...	...	...	...	9	...	...	...
...	6	4	2	1	...	...	...	...	10	3	...	...	2 readmissions. 1 transferred for erysipelas.
...	2	1	...	...	...	...	...	...	3	...	...	...
3	4	6	2	...	...	...	...	...	13	2	...	...	1 readmission. 1 taken away against advice.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	2	...	1	...	...	...	...	2	1	...	...	1 readmission.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Syphilitic.
...	...	1	2	...	1	...	...	...	1	3	...	...	2 readmissions.
...	...	1	...	...	...	...	...	...	...	1	...	...
...	3	5	3	3	...	...	...	...	7	7	...	...	2 readmissions. 1 refused amputation.
1	...	1	...	...	...	...	...	...	1	1	...	...
...	1	1	...	...	...	...	...	...	2	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	1	
...	...	...	1	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	6	1	...	2	1 discharged for misconduct.
2	1	6	...	...	...	...	...	...	4	...	...	...
...	2	1	1	...	...	...	...	...	9	3	...	...
1	1	6	3	1	...	...	...	...	5	...	...	...
...	3	1	1	...	...	...	...	...	1	...	1	...	
...	...	...	...	2	...	...	...	...	1	...	1	...	
...	1	...	...	1	1	...	...	...	2	...	1	...	1 transferred for erysipelas; 1 transferred to Adelaide.
...	...	1	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	1	
...	...	2	1	1	...	...	...	...	4	...	...	...
...	...	4	...	...	...	...	...	...	4	...	...	...
...	...	3	1	...	...	...	...	...	4	...	...	...
...	1	...	1	...	...	...	...	...	2	...	...	...	1 readmission.
...	1	...	...	...	...	...	...	...	1	...	...	...
1	1	1	...	...	...	...	...	...	2	...	...	1	1 followed by gangrene.
...	...	3	...	1	...	...	...	...	4	...	...	...	1 transferred for erysipelas.
1	...	2	2	1	...	...	...	...	1	5	...	...	1 readmission.

TABLE I.—Abstract, showing Diseases in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not re- corded.
SKIN AND CELLULAR TISSUE																		
<i>—continued.</i>																		
Lupus of nose	1	2	...	1	1	1	...	...	...	...	...	...	...	...	...	1	2	...
Eczema of legs (following phlebitis)	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
Eczema of foot . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Gangrene of leg	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
„ foot	3	1	...	...	...	...	...	2	1	1	...	1	...	1	...	...	...	2
„ toe	3	...	...	...	...	...	...	1	2	...	...	1	2	...	...	...	...	...
VARIOUS.																		
Acute meningitis	2	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	1
Rheumatism	1	1	...	...	2	...	...	...	...	...	1	...	...	...	...	...	1	...
Contracted legs . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Tapeworm . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Apoplexy . . . . .	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2
Hysteria . . . . .	...	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2
Chronic deafness . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Albuminuria . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Hæmaturia	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Scarlet fever	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Diphtheria	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Cardiac disease	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Ozæna . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Syphilitic disease of larynx	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Strumous disease, nasal mucous membrane	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Aerial fistula	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Constipation . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
Strumous dactylitis	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Trivial	4	2	1	...	2	1	...	1	1	...	1	...	3	...	...	...	1	1
	{ 933 607 }																	
Total	1540																	

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	...	3	...	...	...	...	...	...	3	...	...	...
...	...	...	1	...	...	...	...	...	...	...	...	1	Transferred for erysipelas.
...	...	1	...	...	...	...	...	...	...	1	...	...
1	...	...	...	...	...	...	...	...	...	...	1	...	Acute traumatic gangrene.
...	1	...	3	...	...	...	...	...	1	2	...	1	1 successful amputation of thigh; 1 fatal amputation below knee. 1 transferred to Arthur; 1 transferred to Infirmary; both with diabetes.
...	1	1	...	1	...	...	...	...	...	3	...	...	All with diabetes.
2	...	...	...	...	...	...	...	...	...	...	...	2	1 transferred to Dorcas.
...	1	1	...	...	...	...	...	...	1	1	...	...	1 transferred to George.
...	...	1	...	...	...	...	...	...	...	...	1	...	1 transferred to Christian.
...	1	...	...	...	...	...	...	...	1	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	2	
...	...	2	...	...	...	...	...	...	1	1	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	Chronic dry catarrh.
...	1	...	...	...	...	...	...	...	...	1	...	...
1	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to Arthur.
1	...	...	...	...	...	...	...	...	...	...	1	...	Transferred to Lydia.
...	1	...	...	...	...	...	...	...	...	...	1	...	Transferred to Job.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	...	1	...	...	Patient would not obey orders
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...
4	2	...	...	...	...	...	...	...	5	1	...	...
									904					
									477					
									48					
									111					
									1540					

TABLE II.—Abstract showing Injuries, &c., in

INJURIES.	Sex.		Age.								Duration before admission.						Not reported.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-13	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6	
GENERAL INJURIES.																	
Burns	22	33	25	7	5	3	5	2	2	6	...	...	...	...	...	...	55
Scalds	14	18	25	3	2	1	...	...	1	...	...	1	...	1	1	...	29
LOCAL INJURIES.																	
Contusion of forehead . . . . .	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
" of face	1	2	...	1	...	2	...	...	...	...	...	...	...	...	...	...	3
Wounds of scalp	22	9	1	2	4	2	4	6	8	4	...	...	...	1	1	...	29
" of forehead	2	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	2
Concussion	63	16	14	14	13	6	9	12	5	6	...	...	...	1	1	...	77
Wound of orbit	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
" of eyeball	2	1	...	...	2	1	...	...	...	...	...	...	...	...	...	...	3
Rupture of eyeball	3	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	3
Wound of soft palate	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
" of face	5	...	...	1	2	1	1	...	...	...	...	...	...	...	...	...	3
Fracture of vault of skull—																	
<i>a.</i> Simple	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2
<i>b.</i> Depressed, simple	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
<i>c.</i> Compound	4	1	1	...	3	...	...	...	1	...	...	...	...	...	...	...	5
<i>d.</i> " depressed	9	1	2	1	2	3	...	...	1	1	...	...	...	...	...	...	10
Hernia cerebri	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Fractures of the base	6	2	...	...	...	4	2	...	2	...	...	...	...	...	...	...	8
Compound fracture of—																	
Superior maxilla	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2
Nasal bones and zygoma	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Inferior maxilla	3	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	3
<i>Injuries to the neck—</i>																	
Wounds	8	5	...	...	...	1	4	3	3	2	...	...	...	...	...	...	13
<i>Injuries to the chest—</i>																	
Contusion	3	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	3
Fractured ribs	20	3	2	...	1	4	4	6	3	3	...	...	...	1	...	...	22
" sternum	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
<i>Injuries to the back—</i>																	
Contusion	11	2	...	2	1	6	1	...	2	1	...	...	...	...	...	...	13

* Almost every case in this column was

Classes, according to authorised Nomenclature.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
23	14	8	8	2	...	...	...	...	24	1	...	30	1 transferred for scarlet fever.
7	6	7	9	1	2	...	...	...	26	4	...	2	1 transferred for scarlet fever.
1	...	...	...	...	...	...	...	...	1	...	...	...
2	1	...	...	...	...	...	...	...	3	...	...	...
7	13	5	6	...	...	...	...	...	28	3	...	...	3 transferred for erysipelas. 1 would not remain in hospital.
...	...	2	...	...	...	...	...	...	2	...	...	...
35	29	12	3	...	...	...	...	...	73	6	...	...	2 males with slight optic neuritis, ? fracture; 2 with fractured ribs; 1 with fractured scapula; 1 with fractured inferior maxilla; 1 ruptured membrana tympani; 1 compound fracture of left ulna; 4 contusion of hip. 1 transferred with supposed typhus.
...	...	1	...	...	...	...	...	...	1	...	...	...
2	1	...	...	...	...	...	...	...	2	1	...	...	1 transferred to ophthalmic ward.
2	1	...	...	...	...	...	...	...	3	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
3	2	...	...	...	...	...	...	...	4	1	...	...
2	...	...	...	...	...	...	...	...	...	...	...	2	
...	...	1	...	...	...	...	...	...	1	...	...	...
1	...	3	1	...	...	...	...	...	4	...	...	1	
2	2	...	4	1	1	...	...	...	7	...	...	3	3 gunshot fractures.
...	...	...	1	...	...	...	...	...	...	1	...	...	Bullet wound April 13th, 6 months before.
2	1	3	1	1	...	...	...	...	3	3	...	2	1 with fracture of vault, and 1 with fracture of inferior maxilla.
1	...	1	...	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...
...	3	...	...	...	...	...	...	...	2	1	...	...
3	4	3	3	...	...	...	...	...	8	2	...	3	Suicidal.
1	1	1	...	...	...	...	...	...	2	...	...	1	2 with fract. ribs; 1 followed by pneumonia.
4	13	5	...	1	...	...	...	...	22	...	...	1	
...	1	...	...	...	...	...	...	...	1	...	...	...
11	1	1	...	...	...	...	...	...	12	1	...	...

admitted shortly after the accident happened.

TABLE II.—

INJURIES.	Sex.		Age.								Duration before admission.						Not reported.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-13	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6	
<i>LOCAL INJURIES—continued.</i>																	*
<i>Injuries to the spine—</i>																	
Fracture	1	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2
Concussion	7	1	...	...	1	2	5	...	...	...	...	...	...	...	1	1	6
Dislocation	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
<i>Injuries to the abdomen—</i>																	
Contusion and concussion .	19	4	1	10	4	4	1	2	1	...	...	...	1	...	1	...	21
" of abdominal wall . . .	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2
" of groin . . . . .	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Wound of groin	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
" of abdominal wall . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Contusion of stomach . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Ruptured spleen	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1
" " and kidney	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
" intestine	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
<i>Injuries to pelvis—</i>																	
Contusion of perinaeum . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Wound of scrotum	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Ruptured urethra	2	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2
Fractured pelvis	4	3	3	...	2	...	2	...	...	...	...	...	...	...	...	...	7
<i>Injuries to upper extremity—</i>																	
Contusion of shoulder . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
" of arm and chest . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
" of arm and forearm . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
" of hand	4	...	1	1	...	2	...	...	...	...	...	...	...	...	...	...	4
Wound of arm	2	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2
" forearm	6	5	...	1	3	1	4	1	...	1	...	...	...	...	...	...	11
" hand	14	4	1	2	7	1	3	3	...	1	...	...	1	...	1	...	16
Avulsion of forearm	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Dislocation of shoulder . .	2	3	...	...	...	...	1	1	2	1	...	...	1	...	3	...	1
" of radius and ulna (backwards at elbow)	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2
" of thumb . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...
Fractured clavicle	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
" scapula	3	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	3
" humerus—																	
<i>a.</i> Simple	2	2	...	...	1	1	...	1	...	1	...	...	...	1	...	...	3
<i>b.</i> Comminuted . . . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
<i>c.</i> Compound	5	...	...	1	1	3	...	...	...	...	...	...	...	...	...	...	5
<i>d.</i> " and comminuted . .	2	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	2

* Almost every case in this column was

continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
1	...	...	...	1	...	...	...	...	1	...	...	1	1 also fracture of astragalus.
1	3	2	2	...	...	...	...	...	5	3	...	...	1 readmission.
...	1	...	...	...	...	...	...	...	...	...	...	1	Upper dorsal.
9	6	7	...	1	...	...	...	...	21	2	...	...	1 with hæmaturia; 1 with slight hæmatemesis.
2	...	...	...	...	...	...	...	...	2	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	Not penetrating.
...	1	...	...	...	...	...	...	...	1	...	...	...	Rupture of mucous coat.
1	...	...	...	...	...	...	...	...	...	...	...	1	Fract. ribs. See also 1 case under fract. pelvis.
1	...	...	...	...	...	...	...	...	...	...	...	1	Fractured ribs.
...	...	...	1	...	...	...	...	...	...	...	...	1	See 'Clin. Soc. Trans.,' vol. xxi.
1	...	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
...	1	1	...	...	...	...	...	...	2	...	...	...
3	1	2	1	...	...	...	...	...	4	...	...	3	1 fractured anterior superior spine; 1 with slight laceration of spleen.
1	...	...	...	...	...	...	...	...	1	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...
2	1	...	1	...	...	...	...	...	4	...	...	...
2	...	...	...	...	...	...	...	...	2	...	...	...
4	4	1	2	...	...	...	...	...	5	6	...	...	1 traumatic aneurysm of radial.
5	5	5	3	...	...	...	...	...	13	5	...	...	1 readmission.
...	...	1	...	...	...	...	...	...	1	...	...	...
3	1	...	1	...	...	...	...	...	5	...	...	...	1 with fracture of humerus.
...	2	...	...	...	...	...	...	...	2	...	...	...	1 with fracture of external condyle.
...	...	...	1	...	...	...	...	...	...	1	...	...	Compound.
...	2	...	...	...	...	...	...	...	2	...	...	...
1	1	1	...	...	...	...	...	...	3	...	...	...
...	1	2	1	...	...	...	...	...	3	1	...	...	1 surgical neck; 1 case occurred with dislocation of shoulder.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	1	3	1	...	...	...	...	...	4	1	...	...
...	...	1	1	...	...	...	...	...	2	...	...	...

admitted shortly after the accident happened.

TABLE II.—

INJURIES.	Sex.		Age.								Duration before admission.						Not reported.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-13	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6	
<i>LOCAL INJURIES—continued.</i>																	*
<i>Injuries to upper extremity—</i>																	
Fractured radius and ulna—																	
<i>a.</i> Simple	2	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	2
<i>b.</i> Compound	2	1	...	1	1	...	...	...	...	1	...	...	...	...	...	...	3
Fracture of hand—																	
<i>a.</i> Compound	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
<i>b.</i> „ and comminuted	3	1	1	1	...	...	1	1	...	...	...	...	...	...	...	...	4
<i>Injuries to lower extremity—</i>																	
Wound of thigh	5	...	...	...	4	1	...	...	...	...	...	...	...	1	...	...	4
„ over knee	2	1	...	...	1	2	...	...	...	...	...	...	...	1	...	...	2
„ of leg	9	...	...	1	2	4	...	2	...	...	...	...	...	1	...	...	8
„ of foot	1	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	2
Contusion of hip	5	2	...	...	...	...	2	1	2	2	...	...	...	...	...	...	7
„ of thigh	1	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	2
„ of knee . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
„ of leg	3	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	3
„ of foot	8	3	1	1	...	4	1	2	...	2	...	...	...	...	...	...	11
Dislocation of hip . . . . .	...	3	...	1	...	1	1	...	...	...	...	...	...	...	1	...	2
„ of little toe, compound	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Fracture of shaft of femur—																	
<i>a.</i> Simple	51	18	35	14	4	...	...	4	4	8	...	...	...	2	...	...	67
<i>b.</i> Compound	3	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	3
<i>c.</i> Comminuted, simple	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Fracture of neck of femur	7	11	...	1	...	2	...	...	6	9	...	...	...	...	2	...	16
„ of patella, simple	15	8	...	...	...	4	3	14	1	1	...	...	...	2	1	...	20
„ of tibia & fibula—																	
<i>a.</i> Simple	93	23	2	4	15	18	25	22	19	11	...	...	...	...	...	...	116
<i>b.</i> Compound	11	...	...	...	...	2	2	5	2	...	...	...	...	...	...	...	11
<i>c.</i> Comminuted, simple	3	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	3
<i>d.</i> Comp. comminuted	1	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2
Fracture of tibia—																	
<i>a.</i> Simple	24	4	2	6	4	3	3	6	2	2	...	...	...	1	...	...	27
<i>b.</i> Compound	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
<i>c.</i> Comp. comminuted	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Fracture of fibula—																	
<i>a.</i> Simple	38	4	...	4	3	14	12	3	4	2	...	...	...	2	...	...	40
<i>b.</i> Compound	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1

* Almost every case in this column was

continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
1	1	...	...	...	...	...	...	...	2	...	...	...
...	2	...	1	...	...	...	...	...	3	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	2	1	1	...	...	...	...	4	...	...	...	1 transferred for chicken-pox.
...	2	2	1	...	...	...	...	...	5	...	...	...
1	1	1	...	...	...	...	...	...	3	...	...	...
...	...	4	4	...	1	...	...	...	8	...	1	...	1 bullet wound. 1 transferred for erysipelas. 1 division of post. tib. artery and nerve, and peroneal artery.
1	1	...	...	...	...	...	...	...	2	...	...	...
2	3	...	2	...	...	...	...	...	5	1	...	1	
...	2	...	...	...	...	...	...	...	2	...	...	...
...	...	...	...	1	...	...	...	...	1	...	...	...
1	1	1	...	...	...	...	...	...	3	...	...	...
4	3	1	3	...	...	...	...	...	11	...	...	...
...	1	1	1	...	...	...	...	...	3	...	...	...
1	...	...	...	...	...	...	...	...	1	...	...	...
1	2	27	32	6	1	...	...	...	66	1	...	2	1 also subcoracoid dislocation of shoulder. 2 contracted diphtheria, 1 erysipelas. 1 case of fractured femur occurred under ether, during forcible movement.
1	...	...	...	1	1	...	...	...	2	...	...	1	1 also fractured ribs.
...	...	...	1	...	...	...	...	...	1	...	...	...
...	2	4	9	3	...	...	...	...	18	...	...	...	5 extra-capsular; 2 extra-capsular impacted; 11 intra-capsular.
...	1	7	15	...	...	...	...	...	23	...	...	...	2 refractured. 1 readmission.
4	36	64	8	3	1	...	...	...	114	1	...	1	1 delayed union. 1 discharged for misconduct.
1	...	...	4	4	1	1	...	...	7	3	...	1	1 transferred for erysipelas.
...	...	2	1	...	...	...	...	...	3	...	...	...	1 delayed union.
...	...	1	1	...	...	...	...	...	2	...	...	...
2	19	5	2	...	...	...	...	...	27	1	...	...	1 no union.
...	...	...	1	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...
7	29	4	1	...	...	1	...	...	41	1	...	...	1 also rupture of anterior tibial vessels, and erysipelas. See Special Table III—Pyæmia.
...	...	...	1	...	...	...	...	...	1	...	...	...

admitted shortly after the accident happened.

TABLE II.—

INJURIES.	Sex.		Age.								Duration before admission.						Not re-ported.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-13	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6	
LOCAL INJURIES— <i>continued.</i>																	*
<i>Injuries to lower extremity—</i>																	
Fracture of foot—																	
<i>a.</i> Simple	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
<i>b.</i> Compound	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
<i>c.</i> Comp. comminuted	6	2	1	1	1	...	3	1	...	1	...	...	...	...	...	...	8
Multiple fracture—																	
<i>a.</i> Simple	8	3	2	1	...	5	...	...	1	2	...	...	...	1	...	1	9
<i>b.</i> Compound	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
<i>c.</i> Comp. comminuted	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2
<i>Injuries to joints—</i>																	
Knee	8	1	2	5	...	...	...	1	...	1	...	...	...	...	...	...	9
Traumatic synovitis—																	
Hip	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Knee	8	7	1	1	1	4	3	2	2	1	...	...	...	3	1	1	10
Ankle	2	1	...	...	...	1	2	...	...	...	...	...	...	...	...	...	3
Total "injuries"	629	220	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total "diseases," Table I	933	607	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	2389																
Ophthalmic cases not included in above report—																	
Mr. Nettleship's	83	84	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mr. Lawford's	36	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	241																
Total, including ophthalmic	2630																

* Almost every case in this column was

continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	...	1	..	...	...	...	...	...	1	...	...	...
...	...	2	...	...	...	...	...	...	2	...	...	...
...	...	3	4	1	...	...	...	...	8	...	...	...
...	5	5	...	1	...	...	...	...	8	1	...	2	1 pre-prostatic puncture.
1	...	...	...	...	...	...	...	...	...	...	...	1	
2	...	...	...	...	...	...	...	...	...	...	...	2	
...	2	5	...	1	1	...	...	...	6	1	...	2	
...	...	...	...	1	...	...	...	...	1	...	...	...
2	10	2	1	...	...	...	...	...	13	2	...	...
1	1	1	...	...	...	...	...	...	2	1	...	...
...	...	...	...	...	...	...	...	...	724	58	1	66	
...	...	...	...	...	...	...	...	...	904	477	48	111	
										2389				
...	...	...	...	...	...	...	...	...	36	101	29	1	
...	...	...	...	...	...	...	...	...	21	43	10	0	
										241				
										2630				

admitted shortly after the accident happened.

Surgical Operations.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	6	..	...	...	...	...	...	7	...	...	...	4 scirrhus; 1 carcinoma myxomatodes; 1 cystic sarcoma; 1 mastitis.
...	2	9	9	...	...	...	...	...	18	1	...	1	19 scirrhus; 1 carcinoma myxomatodes. Tumour in fatal case was ulcerated; death from septicæmia. 1 cystic degeneration.
...	...	2	4	...	...	...	...	...	4	2	...	...	Axillary glands infected in 3 cases; they were removed.
...	...	1	...	...	...	...	...	...	1	...	...	...	Readmission.
...	1	...	...	...	...	...	...	...	1	...	...	...	Readmission.
...	...	1	...	...	...	...	...	...	1	...	...	...	Readmission. Scraping and ZnCl ₂ paste, &c.
...	1	...	...	...	...	...	...	...	1	...	...	...	Squamous celled. ? "benign carcinoma."
1	1	...	1	2	...	...	...	...	3	...	...	2	2 excisions; 2 excisions, followed later by colotomy. No P.M. in the fatal case. 1 colotomy died immediately after the operation; no P.M.
2	1	4	1	...	...	...	...	...	7	...	...	1	Fatal case died of septic pneumonia. 1 floor of mouth removed as well; 1 case glands removed 9 days after first operation; 1 case no glands. Inf. maxilla not divided in any case. 1 case ligation of linguals before removal of tongue.
...	...	...	1	...	...	...	...	...	1	...	...	...	Lower jaw divided, not united when patient left hospital.
...	...	1	...	...	...	...	...	...	1	...	...	...	Écraseur, &c. Preliminary tracheotomy.
...	...	...	1	...	...	...	...	...	1	...	...	...
1	1	3	1	...	...	...	...	...	5	1	...	...	2 cases recurrent; 1 no glands involved. 2 cases extirpation had to be followed by cheiloplasty.
...	1	2	1	...	...	...	...	...	4	...	...	...	1 recurrent; readmission.
...	1	...	...	...	...	...	...	...	...	...	...	...	1 Septic pneumonia.
...	...	1	1	...	...	...	...	...	2	...	...	...	1 readmission following epithelioma of lip; 1 floor of mouth much involved.
...	1	...	...	...	...	...	...	...	...	...	...	...	1 Sole of foot and femoral glands—squamous-celled—ulcerated. P.M.—Death from septicæmia. See 'Lancet,' 1888.
...	...	1	1	...	...	...	...	...	2	...	...	...
...	...	1	...	...	...	...	...	...	1	...	...	...	Readmission after removal of penis.
...	...	1	1	1	...	...	...	...	2	...	...	1	M., perineal exploration: large mass of growth; see Museum. F., dilatation of urethra; 1 growth too extensive for removal; 1 symptoms of hæmorrhage continued after operation.
...	...	2	...	...	...	...	...	...	2	...	...	...	Scraping and ZnCl ₂ paste, &c.
...	...	1	1	...	...	...	...	...	2	...	...	...	Both spindle-celled. 1 recurrent; 1 necrosis in centre of new growth. See 'Path. Soc. Trans.,' vol. xxxix.
1	...	...	...	...	...	...	...	...	1	...	...	...	Admitted for hæmorrhage after scraping.
...	...	1	...	...	...	...	...	...	...	...	...	1	Exploratory operation.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
REMOVAL OF TUMOURS AND NEW GROWTHS										
—continued.										
<i>Sarcoma</i> of thyroid	3	1	...	...	...	...	...	4	...	...
„ plantar fascia . . . . .	...	1	...	...	...	...	...	1	...	...
„ fascia of thigh	1	...	...	...	...	...	...	...	1	...
„ skin	1	...	...	...	...	...	...	...	1	...
<i>Papilloma</i> of lip	1	...	...	...	...	...	...	1	...	...
„ tongue	1	...	...	...	1	...	...	...	...	...
„ skin of neck . . . . .	...	1	...	...	...	...	1	...	...	...
„ larynx	1	1	2	...	...	...	...	...	...	...
Polypus, nasal	1	3	...	...	3	...	1	...	...	...
„ naso-pharyngeal . . . . .	...	1	...	...	...	1	...	...	...	...
Adenoid vegetations of pharynx	1	...	...	1	...	...	...	...	...	...
Sarcomatous „ „	1	...	...	...	1	...	...	...	...	...
Villous tumour of bladder . . . . .	...	2	...	...	...	...	1	...	1	...
Parotid tumours	1	2	...	...	1	...	2	...	...	...
Electrolysis for nævus . . . . .	...	1	1	...	...	...	...	...	...	...
Thermo-cautère of nævus	2	1	3	...	...	...	...	...	...	...
Excision of nævus . . . . .	...	1	1	...	...	...	...	...	...	...
For cirroid aneurysm . . . . .	...	1	...	...	1	...	...	...	...	...
For removal of epulis	1	1	...	...	1	...	1	...	...	...
„ adenoma of breast . . . . .	...	3	...	...	...	3	...	...	...	...
„ lymphoma . . . . .	...	1	...	...	...	...	...	1	...	...
„ fibroma	3	1	...	1	1	...	...	1	...	1
„ lipoma	3	7	...	...	1	4	1	2	2	...
„ exostosis	5	2	...	...	3	3	1	...	...	...
„ myxoma . . . . .	...	1	...	...	...	...	...	...	...	1
„ lymphadenoma	1	...	1	...	...	...	...	...	...	...
„ neuroma	1	1	...	...	...	...	1	...	1	...
„ bursal tumour	1	2	...	...	1	1	...	...	1	...
„ serous cysts	1	3	...	...	...	2	2	...	...	...
„ sebaceous cyst	1	...	...	...	...	...	...	...	1	...
„ dermoid cyst	3	1	...	...	2	2	...	...	...	...
„ mucous cyst	1	1	...	...	1	...	...	1	...	...

continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	1	2	...	...	...	...	...	3	...	...	1	All spindle-celled. 1 readmission. 1 D. from septic infection.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	1	Spindle-celled very large tumour. P.M.—Septicæmia.
...	...	1	...	...	...	...	...	...	1	...	...	...	Melanotic of buttock.
...	1	...	...	...	...	...	...	...	1	...	...	...	? epithelioma.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	...	...	...	2	...	...	...	...	2	...	...	Both thyrotomy. 2nd thyrotomy in one case.
1	2	...	1	...	...	...	...	...	2	2	...	...	All mucous. In 2 cases two operations. 1 case removal of turb. bones.
...	...	1	...	...	...	...	...	...	1	...	...	...	Wire éraseur. See also 1 case polypus recti, under "Fistula in ano."
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	...	1	...	...	Cervical glands involved.
...	...	1	1	...	...	...	...	...	1	...	...	1	Both dilatation of urethra. For C. case, vide 'Lancet,' July 9th, 1887. See another dilatation of urethra under "Epithelioma of bladder." See another case of villous tumour under "Supra-pubic cystotomy."
...	3	...	...	...	...	...	...	...	3	...	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	Second application 20 days after first.
...	1	1	...	1	...	...	...	...	1	2	...	...	1 second operation.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...	Excision. Behind pinna.
1	1	...	...	...	...	...	...	...	2	...	...	...	Both myeloid.
...	2	1	...	...	...	...	...	...	3	...	...	...
...	1	...	...	...	...	...	...	...	1	...	...	...	Submaxillary.
1	1	2	...	...	...	...	...	...	4	...	...	...	1 fibro-cellular of nose; 1 ulcerated pendulous.
...	4	4	2	...	...	...	...	...	10	...	...	...	1 sebaceous cyst removed as well.
...	5	2	...	...	...	...	...	...	7	...	...	...	3 subungual, 2 humerus, 1 frontal; 1 ext. aud. meatus, cancellous, removed with dental drill.
...	...	1	...	...	...	...	...	...	1	...	...	...	Fascia of thigh.
...	...	...	...	1	...	...	...	...	1	...	...	...	3 operations.
...	...	1	1	...	...	...	...	...	1	1	...	...	1 arm stump; 1 sciatic nerve stretched after removal of tumour.
...	1	1	1	...	...	...	...	...	3	...	...	...	1 very large, inner side of knee; 1 both P.P. bursæ solid; 1 right P.P. bursa only enlarged, and nearly solid.
...	3	1	...	...	...	...	...	...	4	...	...	...	1 mamma, 1 upper jaw, 1 scalp, 1 labium.
...	1	...	...	...	...	...	...	...	1	...	...	...	Neck. See also another case under "Lipoma."
...	3	1	...	...	...	...	...	...	4	...	...	...	1 neck, 1 forehead, 1 thyro-hyoid space, 1 supra-hyoid. Both the latter median in position.
1	1	...	...	...	...	...	...	...	1	1	...	...	1 ranula, 1 of mamma.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
CIRCULATORY SYSTEM.										
Ligation of femoral	1	...	...	...	...	1	...	...	...	...
„ radial and ulna	1	...	...	...	1	...	...	...	...	...
„ ulna	2	1	...	...	1	...	1	1	...	...
„ radial	3	5	...	...	3	2	1	...	..	2
„ posterior tibial and perineal .	1	...	...	...	1	...	...	...	...	...
„ branches of external carotid .	...	1	...	...	...	...	...	...	1	...
For arterio-venous aneurysm . . .	1	...	...	...	...	...	1	...	...	...
Ligature of hæmorrhoids	14	5	...	...	...	2	6	7	4	...
Excision of varicocele	15	...	...	...	6	9	...	...	...	...
„ varicose veins	12	3	...	...	3	7	4	1	...	...
RESPIRATORY SYSTEM.										
Tracheotomy	4	2	2	1	...	...	...	...	3	...
Rib resection for empyema	2	...	...	...	...	1	1	...	...	...
DUCTLESS GLANDS.										
Bronchocele (division and removal of isthmus)	...	5	...	...	...	4	1	...	...	...
LYMPHATIC SYSTEM.										
Excision of strumous glands	7	3	...	2	2	5	1	...	...	...
Scraping „ „	10	5	...	1	8	4	2	...	...	...

continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	...	...	1	...	...	...	...	...	1	...	...	...	Abernethian operation (after failure of digital compression) for popliteal aneurysm; other femoral tied for popliteal aneurysm some years before. See 'Brit. Med. Journ.,' Oct. 1, 1887. See also 1 case under "Amputation at hip for osteoid sarcoma of femur."
...	...	1	...	...	...	...	...	...	1	...	...	...
...	1	1	1	...	...	...	...	...	2	1	...	...	1 with suture of ulnar nerve and flexor tendons; 1 with suture of flexor tendons; 1 with suture of ulnar and median nerves.
1	5	1	...	1	...	...	...	...	8	...	...	...	3 with suture of flexor tendons; 1 for aneurysm following wound; 1 suffered from lymphangitis.
...	...	...	1	...	...	...	...	...	1	...	...	...	Also suture of posterior tibial nerve. 1 case of ligation of posterior tibial is recorded under "Incision, &c., of ankle."
1	...	...	...	...	...	...	...	...	...	...	...	...	1 Ligation of both linguals. See "Epithelioma of tongue." Ligature also of internal jugular vein.
...	...	1	...	...	...	...	...	...	1	...	...	...	Of forearm. Ligature of brachial, radial, and ulnar arteries, and deep median vein, after failure of digital compression and Esmarch's bandage. See 'Lancet,' 1888.
...	7	10	2	...	...	...	...	...	19	...	...	...	1 secondary hæmorrhage. See also 1 case under "Fissure of anus."
...	1	9	5	...	...	...	...	...	15	...	...	...
...	1	8	4	2	...	...	...	...	14	...	...	...	1 Fatal case: right patella vein excised; pyæmia. 1 case internal saphena, both sides, extremely dilated. See Museum specimen. 1 case very ill with septicæmia, but recovered.
1	...	...	2	1	...	2	...	...	2	3	...	1	1 Fatal case: readmission with papilloma of larynx. 1 with epithelioma of pharynx; 2 papilloma of larynx; 2 cases of cut throat. See also 1 case under "Epithelioma of tonsil and pharynx."
...	...	1	1	...	...	...	...	...	1	1	...	...	Both cases admitted with sinuses, dating from operations at other hospitals.
...	...	4	1	...	...	...	...	...	5	...	...	...	1 with a distinct tumour of isthmus; lateral lobes not much enlarged.
...	3	6	...	...	1	...	...	...	8	2	...	...	1 case tubercular infection of inguinal glands after excision of hip.
1	7	5	2	...	...	...	...	...	13	2	...	...	In 2 cases scraping repeated.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
NERVOUS SYSTEM.										
Suture of nerve	1	...	...	...	...	...	...	1	...	...
Resection of nerve	1	...	...	...	...	...	1	...	...	...
Nerve stretching	1	...	...	...	...	...	1	...	...	...
Neurotomy	2	...	...	...	...	...	1	...	1	...
For painful stump	1	...	...	...	...	1	...	...	...	...
Excision of painful scar	1	1	...	...	...	1	...	...	1	...
DIGESTIVE SYSTEM.										
<i>Hernia, inguinal, strangulated:</i>										
<i>a.</i> Herniotomy	3	...	...	...	...	1	...	...	...	2
<i>b.</i> Do., with radical cure	11	3	...	...	...	4	3	2	3	2
Radical cure of inguinal hernia	11	...	1	...	2	2	3	1	2	...
<i>Hernia, femoral, strangulated:</i>										
<i>a.</i> Herniotomy . . . . .	...	6	...	...	...	...	1	2	2	1
<i>b.</i> Do., with radical cure	1	9	...	...	...	...	2	2	5	1
<i>c.</i> Do., with resection of gangrenous bowel . . . . .	...	1	...	...	...	...	...	1	...	...
Radical cure of femoral hernia . . . . .	...	2	...	...	...	...	1	...	1	...
<i>Hernia, umbilical, strangulated:</i>										
Herniotomy, with radical cure . . . . .	...	2	...	...	...	...	...	1	1	...
Colotomy	4	2	2	...	...	...	2	1	...	1
For imperforate anus	2	1	3	...	...	...	...	...	...	...
Rectotomy for stricture . . . . .	...	5	...	...	...	5	...	...	...	...
Resection of small intestine for artificial anus	1	...	...	...	...	...	1	...	...	...
Abdominal exploration	6	1	...	...	...	1	4	...	2	...

continued.

Duration of residence after operation.										Result.				Remarks.	
ys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.		
(-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12							
..	1	...	...	...	...	...	...	...	...	1	...	...	...	Median, and flexor tendons. See also cases of nerve suture (ulnar, median, and posterior tibial), under "Circulatory System."
..	...	...	1	...	...	...	...	...	...	1	...	...	...	Ulna.
..	...	...	1	...	...	...	...	...	...	1	...	...	...	Sciatic. See 'Clin. Soc. Trans.,' vol. xx. See also 1 case under "Neuroma."
1	...	...	1	...	...	...	...	...	...	1	...	1	1	gustatory for epithelioma of tongue; 1 posterior tibial for tetanus.
..	...	1	...	...	...	...	...	...	...	1	...	...	...	Old amputation of thigh; sciatic found stretched over end of femur.
..	1	1	...	...	...	...	...	...	...	2	...	...	...	1 of finger; 1 after removal of Meckel's ganglion.
2	1	...	...	...	...	...	...	...	...	...	...	...	3	} See Special Table I.
3	...	4	6	1	...	...	...	...	...	11	...	...	3	
1	1	4	5	...	...	...	...	...	...	9	...	...	2	
1	2	2	1	...	...	...	...	...	...	3	...	...	3	
..	1	5	4	...	...	...	...	...	...	9	...	...	1	
1	...	...	...	...	...	...	...	...	...	...	...	...	1	
..	...	1	1	...	...	...	...	...	...	2	...	...	...
1	...	...	1	...	...	...	...	...	...	1	...	...	1	
2	1	1	1	...	1	2	1	...	3		2 cases (1 fatal, 1 cured) Littré's colotomy. 1 fatal case: ulceration of rectum. P.M.—Caries of 5th lumbar vertebra. 1 fatal case: carcinoma of sigmoid flexure. 1 case pelvic cellulitis mistaken for malignant disease; 1 intestinal obstruction. See also 3 colotomies under "Carcinoma of rectum."
2	1	2	1		P.M. of fatal case showed very peculiar kidney disease.
..	2	1	1	1	...	...	...	...	...	4	1	...	...	Several fistulæ in 1 case. 1 case operated upon twice.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	See Special Summary, and also 'Trans. Clin. Soc.,' vol. xxi.
5	...	2	...	...	...	...	...	...	...	2	...	...	5	2 fatal cases for ruptured spleen. 1 fatal case thought to be ruptured bladder. P.M.—Typhoid, perforation of ulcer, peritonitis. 1 fatal case: acute intestinal obstruction. P.M.—Peritonitis from perforation of duodenal ulcer. 1 fatal case: pelvic suppuration. Operation extended into removal of uterus and appendages. P.M.—Septic peritonitis. Of the 2 non-fatal cases, 1 was for rupture of small intestine. 1 cancer of peritoneum mistaken for ovarian tumour.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							+
	M.	F.	-5	-10	-20	-30	-40	-50	-60	
DIGESTIVE SYSTEM—continued.										
For ulcer of rectum	1	...	...	...	...	...	1	...	...	...
For fissure of anus . . . . .	...	2	...	...	...	1	1	...	...	...
For fistula in ano	31	4	...	...	1	8	14	6	1	...
GENITO-URINARY SYSTEM.										
Castration	3	...	1	...	...	1	1	...	...	...
Circumcision	7	...	...	1	4	1	1	...	...	...
For urethral caruncle . . . . .	...	1	...	...	...	...	...	...	...	...
Supra-pubic cystotomy	12	...	1	3	1	3	...	...	1	...
Lithotrity	6	...	...	...	...	1	...	1	1	...
Lateral lithotomy	3	...	...	...	1	1	1	...	...	...
Perineal puncture	6	...	...	...	1	...	1	2	...	...
Perineal section	11	...	...	...	...	1	2	2	3	...
For pyonephrosis . . . . .	...	1	...	...	...	...	...	...	1	...
For hydronephrosis . . . . .	...	2	...	...	1	1	...	...	...	...
Nephro-lithotomy	1	1	...	...	...	1	...	1	...	...
Nephrectomy	2	1	...	...	...	1	1	...	1	...
Internal urethrotomy	6	...	...	...	...	...	1	2	3	...
Division of meatus urinarius	1	...	...	...	...	...	...	1	...	...
For hydatid of kidney . . . . .	...	1	...	...	...	...	...	...	1	...
Hysterectomy . . . . .	...	1	...	...	...	...	1	...	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
s.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C	R.	U.	D.	
4-5-13		2-4	1-2	2-4	4-6	6-9	9-12	+12					
...	...	...	1	...	...	...	...	...	...	1	...	...	With ischio-rectal abscess.
1	1	...	...	...	...	...	...	...	...	2	...	...	1 with small hæmorrhoids.
1	11	15	8	...	...	...	...	...	32	3	...	...	All incised through sphincter. 4 with ischio-rectal abscess; 1 with polypus, which was removed. See also 1 case of stricture under "Rectotomy for stricture."
...	...	2	1	...	...	...	...	...	...	3	...	...	2 tubercular; 1 degenerating round-celled sarcoma.
2	2	3	...	...	...	...	...	...	...	7	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...
3	...	1	7	1	...	...	...	...	...	8	1	3	8 for calculus; 6 recovered; 1 D. of pelvic peritonitis; 1 D. had prostatic pedunculated tumour, which is now in Museum. 2 cases epithelioma of bladder; 1 fatal; 1 case ? tubercular ulceration. 1 case villous tumour, see 'Lancet,' July 9th, 1887. In 1 case of calculus lithotripsy was previously attempted, but failed.
...	5	...	1	...	...	...	...	...	...	5	...	1	Fatal case: P.M.—Suppurative cystitis and nephritis, &c. Before death supra-pubic cystotomy was performed.
...	...	2	...	...	1	...	...	...	...	2	1	...	1 left hospital with recto-vesical fistula.
...	1	1	4	...	...	...	...	...	...	4	...	2	3 for stricture and retention; 1 for cystitis. Of the 2 fatal cases, 1 had fractured pelvis and cardiac disease; 1 died from suppression of urine.
...	...	3	6	...	2	...	...	...	...	5	3	3	1 fatal case: prostatic calculi. P.M.—Cystitis, pyelitis, &c. 1 fatal case: stricture, extravasation. No P.M. 1 fatal case: stricture, perineal abscess. P.M.—Ulcerative endocarditis. 1 case prostatic calculus, urinary fistulæ; 7 cases of stricture, 2 of which had fistulæ; 1 extravasation and 1 perineal abscess. See also 1 case under "Epithelioma of bladder."
...	...	...	1	...	...	...	...	...	...	1	...	...	Incision in loin.
...	...	1	1	...	...	...	...	...	...	2	...	...	2 aspirations, 1 incision.
...	...	...	1	...	1	...	...	...	...	2	...	...
1	1	...	1	...	...	...	...	...	...	1	...	2	1 fatal: operation for neuralgia. P.M.—Sub-peritoneal cellulitis where kidney had been taken from. 1 fatal: calculus pyonephrosis + epithelioma of kidney. P.M.—Secondary growths in liver. See 'Path. Soc. Trans.,' vol. xxxix. 1 cured: tubercular kidney.
...	...	5	1	...	...	...	...	...	...	6	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	1	...	...	...	...	...	...	...	1	...	...	Incision in loin.
...	...	1	...	...	...	...	...	...	...	1	...	...	For fibroid tumour. See also 1 case under "Abdominal exploration."

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+6
GENITO-URINARY SYSTEM—continued.										
For ovarian tumour . . . . .	...	17	...	...	...	6	3	4	3	...
Oöphorectomy . . . . .	...	3	...	...	1	1	1	1	...	...
For pyosalpinx . . . . .	...	1	...	...	...	1	...	...	...	...
For radical cure of hydrocele	6	...	...	...	1	1	...	2	2	...
" " hæmatocele	1	...	...	...	...	...	...	1	...	...
For simple tapping of hydrocele	3	...	...	...	...	...	1	...	2	...
Tapping and injection of hydrocele	1	...	...	...	...	1	...	...	...	...
Vegetations on vulva . . . . .	...	6	...	...	2	4	...	...	...	...
Warts on penis	1	...	...	...	...	1	...	...	...	...
LOCOMOTORY SYSTEM.										
Removal of necrosed bone from—										
Superior maxilla	1	...	...	...	...	...	...	...	...	1
Inferior maxilla	3	...	1	...	...	...	2	...	...	...
Rib . . . . .	...	1	...	...	1	...	...	...	...	...
Humerus	2	...	...	...	1	...	1	...	...	...
Ulna	1	...	...	...	1	...	...	...	...	...
Radius	2	...	...	1	...	1	...	...	...	...
Phalanges	2	...	...	...	...	...	...	2	...	...
Tuber ischii . . . . .	...	1	...	...	...	...	1	...	...	...
Femur	8	3	...	2	3	3	2	1	...	...
Popliteal space	1	...	...	...	...	...	1	...	...	...
Tibia	2	2	2	1	1	...	...	...	...	...
Fibula	1	...	...	...	1	...	...	...	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
s.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
4-5	1-3	2-4	1-2	2-4	4-6	6-9	9-12	+12					
2	3	7	4	...	...	...	...	...	11	...	...	6	1 case that recovered was pregnant. Of the fatal cases: 2 died of septic peritonitis, irrigation of abdominal cavity in both cases the day before death; 1 case died of hæmorrhage; 1 of secondary malignant growths in the liver; 1 of bronchitis; and 1 ? ether, collapse of lung.
1	1	...	2	...	...	...	...	...	1	...	...	2	Of the fatal cases: 1 died of septicæmia; 1 of peritonitis and hæmorrhage.
1	...	...	...	...	...	...	...	...	...	...	...	1	Tubercular ovary. See Museum, F.F. 51 ¹ . Also 'Path. Soc. Trans.,' 1889. P.M.—Pelvic abscess opening into bladder and rectum; peritonitis.
...	...	3	3	...	...	...	...	...	5	1	...	...	All tunica vaginalis; injury to testicle in 1 operation.
...	...	...	1	...	...	...	...	...	1	...	...	...	Admitted for castration for sarcoma.
2	1	...	...	...	...	...	...	...	3	...	...	...	All tunica vaginalis; 1 tapped twice.
...	1	...	...	...	...	...	...	...	1	...	...	...	Tunica vaginalis.
...	...	2	3	1	...	...	...	...	5	1	...	...	1 patient was operated upon three times.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	1	1	...	...	...	...	1	2	...	...	1 case operated on three times.
...	...	1	...	...	...	...	...	...	1	...	...	...
...	...	1	...	...	...	...	...	...	2	...	...	...	1 case non-union of fracture; 1 case with arthritis of elbow.
...	1	...	...	...	...	...	...	...	1	...	...	...
...	...	...	2	...	...	...	...	...	1	1	...	...	1 case suffered amputation of arm 45 days after sequestrotomy.
...	1	...	1	...	...	...	...	...	2	...	...	...	1 big toe; 1 thumb after whitlow. See also 1 case under "Caries of hand."
...	...	...	1	...	...	...	...	...	1	...	...	...
...	2	2	3	1	2	1	...	...	5	6	...	...	2 cases necrosis of acetabulum as well, secondary to hip excision; 2 cases necrosis of stump after amputation; 1 case extensive central necrosis of the lower end; 1 case two operations; 1 case four months later amputation at hip-joint, and then transferred to medical ward for cerebral tumour. See also 1 case under "Excision of hip," and 1 case under "Osteotomy of femur." See also 1 case under "Amputation for disease of thigh."
...	...	1	...	...	...	...	...	...	1	...	...	...	"Popliteal necrosis."
...	...	1	1	...	1	1	...	...	3	1	...	...	1 case two sequestrotomies; 1 case three operations. See also 1 case under "Incision, &c., of ankle." See also 1 case under "Primary amputation of leg."
...	...	...	1	...	...	...	...	...	1	...	...	...

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							+
	M.	F.	-5	-10	-20	-30	-40	-50	-60	
<i>LOCOMOTORY SYSTEM—continued.</i>										
Removal of necrosed bone from—										
Os calcis	2	1	...	...	2	1	...	...	...	...
Metatarsus	1	4	...	...	1	3	1	...	...	...
Lumbar spine . . . . .	...	1	...	...	1	...	...	...	...	...
Scraping for caries of—										
Mastoid cells	3	1	2	1	...	...	...	...	...	...
Radius . . . . .	...	2	...	...	1	1	...	...	...	...
Hand	3	...	...	1	1	...	...	1	...	...
Rib	1	...	...	...	1	...	...	...	...	...
Femur	3	1	...	...	...	3	1	...	...	...
Tibia	3	3	1	2	2	...	...	...	1	...
Foot	6	1	1	...	4	...	2	...	...	...
Trephining mastoid cells	1	...	...	...	1	...	...	...	...	...
<i>Excision of joints—</i>										
Elbow	2	1	...	...	2	1	...	...	...	...
Wrist	1	1	...	...	...	1	...	1	...	...
Hip	7	3	1	3	5	1	...	...	...	...
Ankle . . . . .	...	1	...	...	1	...	...	...	...	...
Metatarso-phalangeal	4	2	...	...	2	3	1	...	...	...
* <i>Arthrectomy</i> of elbow	2	2	...	...	2	1	...	...	...	...
„ knee	2	2	1	1	1	1	...	...	...	...
„ ankle	3	1	...	1	3	...	...	...	...	...
<i>Forcible movement of joints under anæsthetics—</i>										
Elbow	2	1	...	...	2	1	...	...	...	...

* By "*arthrectomy*" is here meant the removal of a portion of the structures of

continued.

Duration of residence after operation.									Result.			Remarks.	
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.		D.
...	...	2	...	1	...	...	...	...	2	1	...	...	All 1st metatarsal. See also 1 case under "Caries of foot."
...	...	1	2	2	...	...	...	...	5	...	...	...
...	...	...	...	1	...	...	...	...	...	1	...	...	Many pieces of necrosed bone removed from the front of the bodies of the vertebræ.
...	1	3	...	...	...	...	...	...	1	3	...	...	Necrosis in 1 case.
...	...	1	1	...	...	...	...	...	1	1	...	...	1 case readmission, excision of wrist.
...	2	...	...	...	1	...	...	...	2	1	...	...	1 thumb; 1 case little finger and tarsus, later amputation of little finger; 1 case strumous dactylitis, scraping and sequestrotomy.
...	1	...	...	...	...	...	...	...	...	1	...	...	See also 1 case under "Caries of tibia."
...	...	...	2	2	...	...	...	...	2	2	...	...	2 cases great trochanter; 1 case condyle of femur, hæmorrhage 10 days after operation.
...	...	1	2	3	...	...	...	...	3	3	...	...	Scraping of rib in 1 case as well.
...	1	...	5	1	...	...	...	...	2	5	...	...	1 case after Mickülicz's osteoplastic resection; 1 case 5th metatarsal; 3 cases os calcis, 2 of which had a second operation, 1 of these had Pott's curvature; 1 case calcis and cuboid; 1 case extensive tarsal and metatarsal disease, scraping and sequestrotomy.
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	...	1	1	1	...	...	...	3	...	...	...	1 arthritis; 1 ankylosis after dislocation; 1 ankylosis, forcible movement under ether having previously failed.
...	...	...	1	1	...	...	...	...	...	2	...	...
...	...	...	1	2	5	2	...	...	...	10	...	...	1 case joint ankylosed at operation; 1 case sequestrotomy 80 days after excision. See also 1 case under "Incision, &c., of knee."
...	...	...	...	1	...	...	...	...	...	1	...	...
...	...	4	2	...	...	...	...	...	...	5	1	...	4 for hammer-toe; 2 for disease of hallux-joint.
...	...	2	1	...	1	...	...	...	...	2	2	...	1 sent out for misconduct.
...	...	...	1	2	1	...	...	...	...	2	1	1	All for early tuberculosis (subarticular or synovial). In 1 case second arthrectomy 2 months after first operation; 1 went out against advice. See also 1 case under "Incision, &c., of knee."
...	...	...	1	2	...	1	...	...	...	3	1	...	1 case patella sawn across.
...	...	...	1	2	...	1	...	...	...	3	1	...	1 internal malleolus trephined; 1 had to be followed 6 weeks later by Syme's amputation. See also 1 case under "Incision, &c., of knee."
...	2	1	...	...	...	...	...	...	...	1	2	...	2 after trauma; 1 forcible movement under ether several times. See also 1 case under "Excision of elbow."

joint as distinguished from the more formal and complete procedure of *excision*.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.						
	M.	F.	-5	-10	-20	-30	-40	-50	-60
<i>LOCOMOTORY SYSTEM—continued.</i>									
<i>Forcible movement of joints under anæsthetics—</i>									
Hip	1	1	...	...	2	...	...	...	...
Ankle	3	...	...	...	...	..	...	2	1
Knee	4	6	1	2	1	1	4	1	...
<i>Incision and irrigation of joints—</i>									
Knee	8	1	1	4	1	1	1	1	...
Ankle	1	1	...	2	...	...	...	...	...
Removal of loose body from knee	2	...	...	...	1	...	1	...	...
Suture of flail elbow following excision	1	...	...	...	...	...	1	...	...
For badly united fracture	1	...	1	...	...	...	...	...	...
For ununited fracture	1	...	...	...	...	...	...	1	...
<i>Osteotomy of femur</i>	3	3	...	1	4	...	1	...	...
„ tibia . . . . .	...	1	1	...	...	...	...	...	...
„ tibia and fibula	2	...	...	...	...	...	..	2	...
Removal of wedge for club foot . . . . .	...	2	...	1	1	...	...	...	...
Tenotomy for club-foot	8	8	3	2	4	5	2	...	...
Tenotomy for torticollis	1	1	...	1	1	...	...	...	...
„ hammer-toe	2	...	...	...	2	...	...	...	...
„ „ and excision of head of proximal phalanx	2	1	...	...	2	1	...	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	...	...	...	...	1	1	...	...	1	1	...	...	1 ankylosis following arthritis; 1 followed by abscess, which was twice aspirated, and then treated by an antiseptic incision.
...	2	1	...	...	...	...	...	...	1	2	...	...	2 after Pott's fracture.
...	5	3	2	...	...	...	...	...	...	9	1	...	1 both knees; 1 and ankle; 1 and wrist; 1 many joints after rheumatism, right femur broken; 1 would not move under ether.
...	...	4	1	2	1	1	...	...	7	1	...	1	5 cases following wound. 1 fatal from pyæmia. 1 preceded by aspiration, sore on foot, acute suppuration, ? pyæmia or tuberculosis; 1 probably following acute bone mischief, sharp hæmorrhage 20 days after operation; 1 followed by excision of left hip; arthrectomy of right knee and right ankle, ? successive outbreaks of tubercular or pyæmic infection; 1 acute suppuration following entrance of a needle. See also 1 case under "Ununited fracture of patella." See also 1 case under "Amputation for disease of thigh."
...	...	...	1	...	1	...	...	...	1	1	...	...	Both following acute bone inflammation. 1 followed by hæmorrhage, ligature of posterior tibial artery, and later on sequestrotomy.
...	...	1	1	...	...	...	...	...	2	...	...	...	1 case semilunar cartilage. 'See Clin. Soc. Trans.,' vol. xxi.
...	...	...	1	...	...	...	...	...	...	1	...	...	Redressement.
...	1	...	...	...	...	...	...	...	1	...	...	...	Patella. Suppuration in knee-joint. Patient extremely ill.
...	...	...	2	3	1	...	...	...	6	...	...	...	5 genu valgum; 1 ankylosis of knee; 1 was followed by necrosis at point of division of bone.
...	...	...	1	...	...	...	...	...	1	...	...	...	Rickets; curved tibia.
...	...	...	1	1	...	...	...	...	1	1	...	...	Both deformity after Pott's fracture.
...	...	...	1	...	1	...	...	...	2	...	...	...	Both several tenotomies previously.
...	5	4	4	1	1	...	...	1	5	11	...	...	Equinus 6, equino-varus 7, varus 1, valgus 2; 4 cases underwent second operations; 1 case of equinus after large abscess of calf; plantar fascia divided as well as tendons in some cases. See also tenotomies under "Removal of wedge for club-foot."
...	...	...	1	1	...	...	...	...	2	...	...	...
...	1	1	...	...	...	...	...	...	2	...	...	...
...	...	2	1	...	...	...	...	...	3	...	...	...	1 case profuse suppuration, and 30 days later amputation of toe.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<i>LOCOMOTORY SYSTEM—continued.</i>										
<i>Primary amputation of—</i>										
Arm	1	...	...	...	1	...	...	...	...	...
Fingers	8	1	1	2	1	3	1	1	...	...
Thigh	2	1	...	...	...	1	1	1	...	...
Leg	4	...	...	...	...	2	1	...	...	1
Foot	1	...	...	...	...	...	...	...	...	1
Toes	3	2	1	1	...	...	1	2	...	...
<i>Secondary amputation of—</i>										
Thigh	3	...	...	...	...	1	1	...	...	1
<i>Amputations for disease, &c., of—</i>										
Shoulder	1	...	...	...	...	1	...	...	...	...
Arm	1	...	...	...	...	...	1	...	...	...
Forearm	2	1	...	...	...	1	...	...	...	2
Fingers	5	4	...	...	2	...	2	1	3	1
Hip	3	...	...	2	...	...	1	...	...	...
Thigh	11	2	...	...	4	1	2	3	1	2

continued.

Duration of residence after operation.									Result.				Remarks.
a.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12					
...	...	1	...	...	...	...	...	...	1	...	...	...	1 transferred with varicella.
1	1	4	2	1	...	...	...	...	9	...	...	...	1 a "Carden" on both sides. Both fatal cases: P.M.—Organs healthy but anæmic.
2	...	...	1	...	...	...	...	...	1	...	...	2	Fatal case: no P.M.; ? bronchitis. 1 case flaps sloughed, hence subsequently resection of tibia, then suppuration of knee occurred, and the thigh was amputated.
...	1	...	2	...	...	1	...	...	3	...	...	1	Lisfranc's amputation; case did badly, and subsequently required amputation below knee.
...	...	...	...	1	...	...	...	...	1	...	...	...	1 subsequently had cellulitis of foot.
...	...	2	3	...	...	...	...	...	5	...	...	...	Fatal case died of septicæmia. See also 2 secondary amputations (1 thigh, 1 leg) noted in Remarks under "Primary amputations."
...	1	1	...	1	...	...	...	...	2	...	...	1	Osteoid sarcoma of humerus.
...	...	...	1	...	...	...	...	...	1	...	...	...	For paralysis after injury to musculo-spiral. See also 1 case under "Necrosis of radius."
...	...	1	2	...	...	...	...	...	3	...	...	...	1 case tuberculosis of wrist and carpus; 1 case after cellulitis of hand and forearm; 1 case suppuration of carpal joints following treatment of compound ganglion.
...	5	1	3	...	...	...	...	...	6	2	...	1	1 fatal for wound infected by tetanus. 4 for whitlow; 1 for enchondroma; 1 for epithelioma; 1 for painful scar; 1 for deformity after injury. See also 1 case under "Caries of hand."
...	...	...	...	3	...	...	...	...	2	1	...	...	1 for hip disease; 1 for recurrent round-celled sarcoma of femur, Jordan's amputation; 1 for osteoid sarcoma of femur, secondary hæmorrhage, ligature of common femoral with kangaroo tendon by means of a clove hitch, coats not ruptured. See 'Clin. Soc. Trans.,' vol. xxi. See also 1 case under "Necrosis of femur."
...	...	4	7	1	...	...	...	...	12	...	...	1	1 fatal case acute traumatic gangrene; 5 cases tuberculosis of knee and phthisis; 1 case ulceration of leg; 1 case a "Carden" for ankylosis of knee after arthritis; 1 case senile gangrene of foot; 1 case necrosis of tibia; 1 case suppuration of semi-membranosus bursa, and disorganisation of knee-joint; 1 case acute necrosis of femur, suppuration of knee-joint, aspiration followed by incision and irrigation, and later by amputation of thigh. 1 spindle-celled sarcoma of femur, see Mus. spec., C. 277; no recurrence up to this date, 21 mos. after operation; a "fer-rule" of bone separated, hence sequestromy 2 mos. after amputation, see Museum, C. 158 ² .

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+
<i>LOCOMOTORY SYSTEM—continued.</i>										
<i>Amputation for disease, &c., of—</i>										
Leg	3	2	1	...	1	...	1	1	1	...
Foot	6	3	...	1	4	1	1	1	1	...
Toes	3	1	...	1	1	...	...	...	1	...
<i>Reduction of dislocation of—</i>										
Shoulder	2	3	...	...	...	...	1	1	2	...
Elbow	1	1	...	1	1	...	...	...	...	...
Metacarpo-phalangeal . . . . .	...	1	...	...	...	...	1	...	...	...
Hip . . . . .	...	3	1	...	...	1	1	...	...	...
Metatarso-phalangeal	1	...	...	...	1	...	...	...	...	...
Cervical spine	1	...	...	...	...	...	...	1	...	...
Internal semilunar cartilage	1	...	...	...	...	...	1	...	...	...
<i>REPARATIVE OPERATIONS.</i>										
Harelip	3	4	7	...	...	...	...	...	...	...
Cleft palate	2	4	...	2	4	...	...	...	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C	R.	U	D	
...	...	3	2	...	...	...	...	...	4	...	...	1	1 fatal case for gangrene. 2 cases circular ulcer of leg; 1 case necrosis of tibia and disease of ankle; 1 case tubercular disease of tarsus, &c., calcis had been removed some years before, space now occupied by fibrous tissue, see Museum specimen. See also 1 case under "Amputation of foot for disease." See also 1 case under "Amputation of toes for disease." See also 1 case under "Avulsion of great toe-nail."
...	...	2	3	3	1	...	...	...	9	...	...	1	Mickulicz's amputation, see 'Med. Soc. Trans.,' vol. xi; 1 sub-astragaloid amputation, capital stump; 1 Chopart; 6 Syme's amputations, all for caries, except one, which was for congenital deformity. Heel flaps sloughed in 1 case, necessitating later amputation of leg. See also 1 "Syme" under "Arthrectomy of ankle."
...	1	1	1	1	...	...	...	...	3	...	...	1	1 fatal case: amputation of big toe for phalangeal necrosis, followed by cellulitis of foot; amputation of leg on day of death. P.M.—Advanced cirrhosis, cardiac disease, &c. 1 big toe for arthritis, metatarso-phalangeal joint, and suppurating union; 1 for deformity of fifth toe; 1 for deformity of right third toe, and tenotomy of ext. prop. pollicis. See also 1 case under "Excision of head of prox. phalanx for hammer-toe."
3	1	...	1	...	...	...	...	...	5	...	...	...	All subcoracoid; 1 with fracture of humerus.
...	2	...	...	...	...	...	...	...	2	...	...	...	Radius and ulna backwards in both cases; 1 with fracture of external condyle.
...	...	...	1	...	...	...	...	...	...	1	...	...	Compound of thumb, followed by cellulitis of hand.
...	1	1	1	...	...	...	...	...	3	...	...	...	2 sciatic, 1 dorsal; all reduced by manipulation.
1	...	...	...	...	...	...	...	...	1	...	...	...	Right 5th toe compound; fracture of 3rd and 4th metatarsal bones.
...	1	...	...	...	...	...	...	...	...	...	...	1	With fracture, as seen P.M. Attempted reduction under ether.
...	1	...	...	...	...	...	...	...	...	1	...	...	Had been displaced several times before.
...	4	3	...	...	...	...	...	...	5	1	1	...	1 double, 6 single. 1 followed by pneumonia; 1 line of union broke down, and considerable hæmorrhage occurred. In 2 staphyloraphy was performed, and in 4 staphyloraphy and uranoplasty. In 2 of the latter secondary hæmorrhage occurred.
...	2	3	1	...	...	...	...	...	1	4	1	...	

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+6
<i>REPARATIVE OPERATIONS—continued.</i>										
Rhinoplasty	1	...	...	...	...	...	1	...	...	...
For Dupuytren's contraction	1	...	...	...	1	...	...	...	...	...
Blepharoplasty . . . . .	...	1	...	...	...	1	...	...	...	...
<i>Plastic for—</i>										
Sinus after supra-pubic cystotomy	1	...	...	...	...	...	...	...	1	...
Perineal fistula	1	...	...	...	1	...	...	...	...	...
Recto-vaginal septum . . . . .	...	1	...	...	1	...	...	...	...	...
Closure of colotomy wound . . . . .	...	1	...	...	...	1	...	...	...	...
Gunshot injury of thumb	1	...	...	...	...	1	...	...	...	...
Cicatrix after burn of neck . . . . .	...	2	...	1	...	1	...	...	...	...
" " arm and forearm . . . . .	...	1	...	...	...	1	...	...	...	...
" " hand . . . . .	...	1	1	...	...	...	...	...	...	...
" after injury to thumb	1	...	...	...	...	1	...	...	...	...
<i>Division of the sacro-iliac Synchondroses</i> <i>for ectopia vesicæ</i>	1	...	...	1	...	...	...	...	...	...
<i>MISCELLANEOUS.</i>										
Free incision of suppurating ganglion	1	...	...	...	1	...	...	...	...	...
" carbuncle	1	1	...	...	...	...	...	...	1	1
Incision and irrigation of bursæ	10	12	...	...	11	6	1	2	2	...
Aspiration of bladder	2	...	...	...	...	...	...	1	1	...
" bursal cyst of shoulder	1	...	...	...	...	...	...	...	1	...
" hip-joint	1	...	...	1	...	...	...	...	...	...
" pneumo- and hæmato-thorax	1	...	...	...	...	1	...	...	...	...
For conical stump	1	...	...	...	1	...	...	...	...	...
Injection of spina bifida . . . . .	...	1	1	...	...	...	...	...	...	...
For atresia narium	1	...	...	...	...	1	...	...	...	...
Scraping lupus	1	8	...	2	3	...	1	...	3	...
" strumous ulceration . . . . .	...	1	...	...	1	...	...	...	...	...
Excision of tonsils . . . . .	...	1	...	...	1	...	...	...	...	...
Avulsion of great toe-nail	1	2	...	...	1	1	...	...	...	1
Incision of liver abscess	1	...	1	...	...	...	...	...	...	...
Excision of eyeball	4	1	...	...	3	1	...	1	...	...

continued.

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	1	...	...	...	...	...	...	...	1	...	...	...	For syphilitic ulceration.
...	...	1	...	...	...	...	...	...	1	...	...	...	Left ring finger.
...	...	...	1	...	...	...	...	...	...	1	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...	Readmission.
...	...	...	1	...	...	...	...	...	1	...	...	...
...	...	...	1	...	...	...	...	...	1	...	...	...	Readmission. Trauma.
...	...	...	1	...	...	...	...	...	1	...	...	...	Readmission.
...	...	...	...	1	...	...	...	...	1	...	...	...
...	...	...	1	1	...	...	...	...	...	2	...	...
...	...	...	...	1	...	...	...	...	...	1	...	...	2 operations.
...	...	...	1	...	...	...	...	...	...	1	...	...	2 operations. Injury with a planing machine.
...	...	...	...	...	1	...	...	...	...	1	...	...	3 subsequent plastic operations to cover exposed surface of bladder. Division of synchondroses gave a gain of 1 inch between the anterior superior spines. See 'Med.-Chir. Trans,' vol. lxx.
...	...	1	...	...	...	...	...	...	...	1	...	...
...	...	2	...	...	...	...	...	...	...	2	...	...
1	7	10	3	1	...	...	...	...	...	22	...	...	20 inflamed pre-patella bursæ; 1 with cellulitis of leg; 1 inflamed olecranon bursa; 1 large chronic swelling, inner side of knee.
...	...	1	...	...	1	...	...	...	...	1	...	1	Both for retention from stricture.
...	1	...	...	...	...	...	...	...	...	1	...	...	Readmission. Very large cyst.
...	...	...	...	1	...	...	...	...	...	1	...	...	Followed by antiseptic incision. For other cases of "aspiration," see headings of "Forcible movement of hip," "Incision and irrigation of knee," "Amputation of thigh for disease," "Incision of spinal abscess," and "Incision of hydronephrosis."
...	...	...	...	1	...	...	...	...	...	1	...	...
...	1	...	...	...	...	...	...	...	...	1	...	...	Readmission. Resection of humerus and removal of neuroma.
...	1	...	...	...	...	...	...	...	...	1	...	1	Morton's fluid. P.M.—No change in sac.
...	1	...	...	...	...	...	...	...	...	1	...	...	Congenital syphilis.
1	2	4	2	...	...	...	...	...	...	3	6	...	2 cases were scraped twice. 1 case ankle and knee; all the rest of face.
...	...	1	...	...	...	...	...	...	...	...	1	...	Arm.
...	...	1	...	...	...	...	...	...	...	1	...	...
2	...	1	...	...	...	...	...	...	...	2	...	1	Fatal case: avulsion followed by gangrene. Amputation of leg 4 days before death. P.M.—Chronic Bright's disease, &c.
...	...	1	...	...	...	...	...	...	...	...	...	1	P.M.—Abscess of abdominal wall and liver. ? Actinomycosis.
3	2	...	...	...	...	...	...	...	...	5	...	...	Wound 2; rupture 3.

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<i>MISCELLANEOUS—continued.</i>										
Removal of turbinated bones	1	...	...	...	1	...	...	...	...	...
Exploration for bullet	1	...	...	...	...	1	...	...	...	...
Trephining of skull	5	1	2	...	1	2	...	...	...	1
Elevation and removal of depressed bone (skull)	2	...	...	...	1	...	...	...	1	...
Incision and irrigation of hæmatoma	3	1	...	1	...	1	...	2	...	...
„ of spinal abscess	21	8	3	9	5	6	3	...	2	1
Suture of thyroid cartilage	1	1	...	...	...	...	...	1	...	1
„ soft palate for wound	1	...	1	...	...	...	...	...	...	...
„ conjunctiva for wound	1	...	...	...	...	1	...	...	...	...
Immediate suture of tendons	7	2	1	2	2	...	3	1	...	...
	543	329	The number of operations recorded under the Table=82. When a patient was 2nd (and 3rd, &c.) operation is included of operations therefore for the year=							
	872									
Tracheotomies done in medical wards, not included in above Table	23	19	31	9	2	...	...	...	...	...

continued.

Duration of residence after operation.										Result.			Remarks.	
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
...	1	...	...	...	...	...	...	...	1	...	...	...	For strumous disease of nasal mucous membrane. See also 1 case under "Nasal polypus."
...	...	...	1	...	...	...	...	...	1	...	...	...	Leg. Wound healed; bullet not found.
1	1	...	2	1	1	...	...	...	4	...	...	2	2 frontal; 3 parietal, 1 of these a bullet fracture; 1 occipital, and 6 days later more bone was removed to diminish tension. P.M. of fatal cases.—1 basal and spinal meningitis; 1 commencing meningitis, brain greatly contused.
...	1	...	1	...	...	...	...	...	2	...	...	...	1 frontal; 1 parietal. See also 1 case under "Trephining skull."
...	...	...	4	...	...	...	...	...	4	...	...	...	2 buttock; 1 popliteal space; 1 perineum, no injury to urethra.
...	...	5	8	10	2	3	1	...	4	17	...	8	Fatal cases.—1 double psoas abscess; no P.M. 1 lumbar caries; P.M.—amyloid disease, pneumonia. 1 cervical caries; P.M.—Phthisis, &c. 1 dorsal caries; ? bronchitis from ether. 1 lumbar caries; aspiration and subsequent incision of double psoas abscess; P.M.—Tuberculosis of lungs, &c. 1 diphtheria. 1 extensive caries and psoas abscess. 1 thought to be spinal abscess; P.M.—Post-peritoneal abscess, no connection with any organ traced, some pus found in vertebral canal. Non-fatal cases.—3 iliac abscesses; 18 psoas (2 double). Probable part of spine involved; 9 lumbar; 3 dorso-lumbar; 6 dorsal; 3 cervical. 1 aspirated before incision, and 1 case operated upon twice. For 2 cases treated by lumbar incision, see 'Med. Soc. Trans.,' vol. xi, and 'Lancet,' Dec. 24, 1887.	
1	...	1	...	...	...	...	...	...	1	...	...	1	Both suicidal wounds. Fatal case: P.M.—Contracted granular kidneys, chronic bronchitis, &c.
...	1	...	...	...	...	...	...	...	...	1	...	...	Some of the stitches gave way.
1	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to ophthalmic ward.
5	1	1	2	...	...	...	...	...	6	3	...	...	All flexor tendons of muscles of forearm. See also cases of suture of tendons under "Circulatory System."
"Remarks," and not entered in operated on more than once, the under "Remarks." The total number 872 + 82 = 954.										606	177	6	82	
										872				
33	3	5	1	...	...	...	...	...	6	...	...	36	Diphtheria 39; broncho-pneumonia, with œdema of larynx, 2; abscess of neck, with œdema of glottis, 1. (2 cases were still in the hospital at the close of the year.)

Not included in above Table.

1. Antiseptic incisions of abscesses, including those of breast and around joints
 2. Incisions for erysipelas and cellulitis.
 3. Sounding the bladder under ether for symptoms of stone—about 12 or more during the year.
 4. The treatment of sloughing chancre (7 males) under anæsthetics; the prepuce slit up and nitric acid applied.
 5. The application of nitric acid to sloughing syphilitic ulceration of breast (1 case) under ether.
 6. Operations in the medical wards:
 - 2 cases of *hernia*, referred to in the Special Table.
 - 2 *colotomies*.—1 for carcinoma of sigmoid flexure. Both fatal.
 - 5 cases of *abdominal section*.—2 for internal strangulation, in both of which gangrenous bowel was resected, but unsuccessfully. 1 for intussusception, which ended fatally. 2 for acute peritonitis from perforation; 1 of vermiform appendix, in which the abdominal cavity was irrigated and cleansed, &c., but the patient died; and 1 case for supposed perforation of a gastric ulcer; some recent lymph was found in the neighbourhood of the neck of the gall-bladder and duodenum; the abdominal cavity was irrigated, and the patient completely recovered.
 - 4 cases of *abscesses* may be mentioned which were operated upon.—1 case in which a large abdominal abscess in a boy, which was discharging at umbilicus, was discovered to be due to necrosis of the posterior surface of the symphysis pubis; he died of lardaceous disease, &c., shortly afterwards. 1 case abscess due to caries of spine with paraplegia; relieved. 1 case perityphlitic abscess; recovered. 1 case acute periostitis of ilium; incision through glutei, pus in sacro-iliac joint; pyæmia; death.
 - 3 cases of *incision of liver abscess*. 1 death.
 - 6 *resections of rib*.—2 died.
 - 1 case of *hæmorrhoids*, with fissure, successfully operated on.
- In addition, many tappings and aspirations of abdominal and pleural cavities respectively occurred, and several ordinary abscesses were incised.

SUMMARY OF DISEASES.

GENERAL DISEASES.

ERYSIPELAS (arising in the hospital).

See Special Table.

Erysipelas (admitted as such).—Males 37, females 21. C. 50, R. 1, U. 1, D. 6. Cutaneous 42; cellulo-cutaneous 11; cellular 5. *Causes*.—Contusion 6; crushed thumb 1; syphilitic ulcer 1; stump not healed 1; compound fracture of forearm, superficial wound nearly healed 1; vaccination 3; burn 2; stab of shoulder 1; wounds 10; eczema 2; scald 2; abscess of buttock 1; ulcer of leg 5; donkey bite 1; bursitis of elbow 3; abscess of groin 2; boil 1; operation on nævus of lip 1; abscess of scalp 1; whitlow 1; suppurating gunma 1; suppurating umbilicus 1; abscess of temporal fossa 1; unknown 9. Affecting leg 10; foot 3; arm and forearm 9; leg and foot 2; stump 1; forearm and hand 5; shoulder, back, chest and buttock 1; face 6; face and scalp 4; whole body 1; face, neck, and front of chest 1; buttock 1; scalp, neck and face 1; thigh and leg 2; scalp 7; neck and face 1; vulva 1; thigh 1; abdominal wall 1. *Complications*.—Abscess of foot 1; succession of abscesses 1; delirium 5; pneumonia 3; psoriasis 1; diarrhœa 1; bursitis patellæ 1; inflamed axillary glands 1; glandular abscesses of neck 1; bronchitis 1; bedsores, and later amputation of forearm 1; lymphangitis 1; urticaria 1; marasmus 1; albuminuria 1; caries of spine and double psoas abscess 1; septicæmia 1; second attack 2; third attack 1. *Treatment*.—Internally: usually perchloride of iron in large doses, a few cases quinine. Locally: warm lead, or chlorinated soda lotions and linseed poultices; incisions in 25 cases.

Fatal cases.

Male; æt. 42. One month before admission burn of leg, ulceration healing; but one week before admission erysipelas set in. On admission the whole lower limb was swollen and red, several incisions were made. Much albumen in urine. Limb gradually improved, and patient was then transferred to the medical side. He shortly afterwards died, and at the P.M. caries of the spine and a commencing psoas abscess was discovered. See medical notes for further particulars.

Male, æt 23. Ten days before admission received a scalp wound during a

drunken fight. Two days before admission erysipelas supervened and spread over the face, scalp and neck. In the hospital he was violently delirious, and died on the tenth day. Temperature varied from 101° to 103.8° . *Treatment.*—Bromide and chloral, stimulants and iron. Lot. Plumbi applied locally. No P.M.

Male, æt. 45. Was admitted with severe erysipelas of the foot and leg, and bronchitis. He had been ill for ten days. Cause of attack unknown. *Treatment.*—Incisions, perchloride of iron and quinine, poultices, chlorinated soda irrigation, and subsequently lead lotion compresses. Pneumonia, however, developed. Temperature was continuously very high, and in spite of stimulants, ammonia and ether, &c., he died on the thirteenth day. P.M.—Consolidation partly grey, partly red, of the lower, middle, and half the upper lobes of the right lung. Spleen enlarged and soft. Liver pale and opaque. In abdomen there were signs of general old peritonitis indicated by numerous adhesions. No sign of past ulceration of ileum or cæcum. Other viscera healthy.

Male, æt. 21 days. Very emaciated infant, with a suppurating umbilicus and erysipelas of the abdominal wall. Aphthous condition of mouth and subnormal temperature. He died on the third day. P.M.—Lungs incompletely distended, dark blue, depressed, atelectatic areas being numerous distributed over them. At umbilicus there is an unhealthy ulcer, confined to skin. No other abnormal signs.

Female, æt. 44. Patient was an alcoholic subject. A week before admission she received a contusion of her leg. It began to swell, and became painful immediately. She was brought to the hospital at 6 a.m., having become delirious an hour before. Severe erysipelas of the right leg, and a temperature of 105.4° were noted. The patient rapidly became comatose, and died the same evening ? of septicæmia. P.M.—Body poorly nourished, right leg swollen, skin red, and sloughing in places. Heart normal. Lungs and spleen normal. Liver large, lobules swollen and opaque. Kidneys: In medullary part of left there was a mass of white moderately firm ? new growth. Cortex: Cloudy swelling in both kidneys.

Female, æt. 23 months. Two days before admission was scalded on the face, neck, and front of chest. She was admitted with cutaneous erysipelas of these parts. The attack lasted about a week, but the child lapsed into an apathetic condition, with occasional diarrhœa and vomiting, and generally a subnormal temperature. She gradually became weaker, and died in a convulsion on the morning of the twenty-second day. P.M.—Cause of death could not be ascertained. Kidneys pale but not diseased.

Pyæmia.—(See Special Table.)

Tetanus.—Males 2. D. 2.

Male, æt. 30. Ten days previous to admission, a nail penetrated the foot between the first and second toes, he continued his work until the day he came to the hospital, when he had some stiffness of the jaws and difficulty in swallowing. On examination it was found that he could not open his mouth; there was some stiffness of the back of the neck, and an occasional spasm in respiration. He pointed out a minute wound in the foot, which might otherwise have escaped observation. There was no tenderness or any sign of inflammation about it. He was very soon placed under chloroform. During the administration

of the anæsthetic the first general spasm occurred. The wound in the foot was opened up, and the posterior tibial nerve behind the ankle divided. He was ordered a subcutaneous injection of curare every four hours, and nutrient enemata. Later in the day it was noticed that he was quite unable to swallow, and the mouth was firmly closed, but it was not until 8 o'clock the next morning that another general convulsion occurred. This was of extreme violence, and he died fifteen minutes after it subsided. P.M.—Pericardium adherent, blood liquid, in the lower lobes of both lungs there were numerous large recent hæmorrhages, brain injected, no marked change. Spinal cord and medulla: Small patches of congestion in both grey and white matter.

Male, æt. 59. Ten days before admission the end of the right thumb was crushed. Amputation through the last phalangeal joint was performed by the local medical man. The wound progressed favorably until the evening before he came to the hospital, when he suddenly experienced severe pain in the stump, stiffness of the jaws and neck, and his wife said that his speech was thick. The following morning the pain appeared to be mostly in the back, he could not swallow, and had a "catch" in his breathing. The thumb was amputated on admission, and he was placed in a small ward, and given Chloral Hyd. gr. xx, every two hours unless asleep. He did well, taking food and sleeping until the following evening, when nicotine was ordered in the place of chloral. Three hours later he had a severe spasm in attempting to swallow medicine (mss aq. ʒj), and still later much pain in the abdomen. During the next three days he gradually became worse, and chloroform had on many occasions to be administered to allay the attacks of extreme dyspnœa. He died on the morning of the fifth day, shortly after a general convulsion, the temperature being 103·8°. P.M.—Lungs: Left œdematous and hyperæmic posteriorly, the lower lobe of the right was in an early pneumonic stage, capsule of spleen much thickened. Kidneys small but healthy, in one was a nodule of new growth the size of a hazel-nut. No undue vascularity detected about brain or spinal cord.

For a note recording certain experiments with the peripheral nerves and parts of the central nervous system of these patients, and indicating the traumatic, infective character of tetanus, see 'Lancet,' Feb. 4th, 1888, p. 213. It is worthy of note that ten days elapsed in each case between the infliction of the wound and the onset of symptoms, a period which corresponds to the latent period in experimental inoculations.

*Syphilis*¹—

Primary.—Males 1, females 2. C. 3.

Male, æt. 67. Admitted for malignant disease of penis; on being placed under ether, and prepuce slit up, a hard chancre was discovered, a day or two afterwards a roseola appeared. Females—admitted with vaginal discharge and hard chancre, developed sore-throat and roseola in hospital.

Secondary.—Females 27. C. 22, R. 5. Admitted for—soft chancre 7; vaginal discharge 20; ulceration of tongue 1; gonorrhœal rheumatism 1; warts 1; condylomata 1; roseola 1. *Complications.*—Rupia 1; salivation 1; condylomata 6; alopecia 7; warts 3; induration of glands 2; roseola 8; papular eruption 2;

¹ Patients entered as cured were those leaving without external signs.

squamous eruption 4; vaginal discharge 1; congestion or ulceration of fauces 11; ovaritis 1; inflammation of labia 3; iritis 1; phlyctenular ophthalmia 1; anæmia 1; ulceration of tonsils 1; gluteal abscess 1; ulcers of breast 1; atresia vaginæ 1 (transferred for operation).

Tertiary.—Males 8, females 5. C. 6, R. 6, D. 1. Periostitis 1; ulceration of palate 2; ulceration of rectum 1; gumma of leg 2; extensive scarring of old ulceration over cutaneous surfaces 1; rupial sores 1; caries of sternum and sacrum 1; gumma of thigh 1; psoriasis 1; ulcers of leg 1; ulceration of tongue 2; induration of glands of neck 2; ulceration of tonsils 1; gumma of front of chest over sternum 1; ulceration of epiglottis 1; sloughing gumma of neck 1; ulceration of pharynx 1; pneumonia 1 (no P.M.). One case complicated with synovitis of knee due to extension of inflammation from a gumma.

ACUTE CELLULITIS.

(Not admitted as erysipelas according to authorised nomenclature.)

Males 32, females 22. C. 43, R. 6, U. 1, D. 4.

Fatal cases.

Male, æt. 33. Five days before admission contusion of elbow. On admission cellulitis (acute) from hand to shoulder. Patient unconscious, temperature 97·2°, he died on the third day. P.M.—All the organs presented the pallor, opacity, and slight swelling which is usual in fever, no gross disease detected. The subcutaneous cellular tissue of the right arm and forearm was the seat of acute inflammation.

Male, æt. 30. Two weeks before he came to the hospital, a boil formed on the buttock. On admission acute cellulitis of buttock and posterior aspect of thigh; patient delirious, incisions were made and the usual treatment adopted, but death took place on the second day. P.M.—Viscera congested and swollen, no other abnormal condition. Subcutaneous tissue of posterior aspect of right thigh and buttock sloughing.

Male, æt. 80. Three days before admission, forearm began to swell, and a black spot of gangrene was discovered on the thumb. When the patient reached the hospital, he was found to be suffering from cellulitis extending from the hand to the side of the chest. He was semi-comatose, temperature subnormal. He lived three days; no incisions were made. P.M.—No gross disease, cloudy swelling of all organs, blood fluid, interior of vessels deeply stained. Heart hypertrophied, some atheroma of aorta and cerebral vessels.

Female, æt. 50. Had been an out-patient with suppurating cervical glands. These had been incised and scraped. On admission five wounds of the neck were found, all sloughing deeply. Temperature 104°, and patient was in a semi-comatose state. She died at the end of the second day, the thermometer registering at that time 106·2°. P.M.—Cellular tissue of neck inflamed and sloughing, lungs very œdematous. Heart soft and flabby, aorta extremely atheromatous and dilated. Gummata of liver. Other organs soft and swollen.

CHRONIC CELLULITIS.

Females 3. D. 1, R. 2.

Fatal case.—Female, æt. 34. Illness commenced 6 months before she came to the hospital, with severe pain in the abdomen and occasionally yellow discharge from the vagina. Two weeks after the first onset of symptoms she noticed a swelling in the region of the right iliac fossa. On admission a tumour was found occupying the right iliac and hypogastric regions, the uterus was displaced to the left. The evening temperature was usually about 101°; night sweats. After being in the ward a fortnight, an antiseptic incision was made in the groin, and some pus evacuated. The next day the discharge was free, and pus was also noticed coming from the vagina. She continued in much the same state for 3 months, when abdominal exploration was decided upon; this was extended into complete removal of the uterus and its appendages. There were numerous adhesions, and the bladder wall was accidentally torn during the necessary manipulations. The patient died of peritonitis 4 days after the operation.

Condition of parts removed.—There were several fibro-myomata of uterus varying in size from a goose's egg to a pea; some had a soft cheesy centre, others contained calcified nodules. Fallopian tubes dilated, half an inch in diameter, coats greatly thickened, pus in both tubes. Ovaries—right was suppurating, left the seat of cystic disease. P.M.—Coils of intestine coated with recent lymph, and loosely adherent. Small amount of pus in pelvic cavity, linear rent in posterior wall of bladder 1½ inches from above downwards, the edges of which were securely united by sutures. Lower end of right ureter torn through with its free end congested, swollen and unsecured by a ligature. No urine was detected in the abdominal cavity. Kidneys and other organs healthy.

Of the other 2 cases 1 was transferred to Adelaide, and 1 is described under "Digestive System," as a mistake in diagnosis was made, and a colotomy performed.

LOCAL DISEASES.

TUMOURS.

Carcinomata—

Scirrhus of breast.—Females 31. C. 24, R. 5, U. 1, D. 1. Right 12, left 19. In 23 the axillary glands were affected, in 1 case the supraclavicular glands also. No secondary growths of internal organs reported in any case. Duration before admission.—Two months 1; 3 months 1; 4 months 1; 5 months 1; 6 months 4; 7 months 2; 8 months 1; 10 months 6; 12 months 5; 2 years 5; 3 years 3; 4½ years 1. Married 23; single 8; only 7 reported to have had children, whilst 4 were sterile, and 4 had had miscarriages. Hereditary history of cancer in 3;

and family history of phthisis in 2; in 7 there was a history of trauma; discharge from nipple 3; retraction of nipple 7; adherent to pectoral muscle 3; adherent to skin 14; nodules in skin 1; ulcerated 1. *Treatment.*—In 20 the breast was removed, and the axilla cleared; in 7 the breast only was removed; 2 went out of hospital of their own accord without operative interference; and 2 were advised against operation. *Complications.*—Eczema of nipple 1; recurrence before patient left hospital 1; axillary glands infected and not removed 1; erysipelas 6; septicæmia 1; in 1 case treatment was deferred for a time owing to pleural effusion, but was afterwards operated on and recovered; in 2 cases there was myxomatous degeneration; 1 cystic.

Fatal case.—Female, æt. 67, married. Had a severe blow 4 years before on left breast. Ten months ago noticed swelling and pain in left mamma. On admission large scirrhus tumour commencing to ulcerate through skin at inner side of nipple. Skin around ulcer blue and puckered. Glandular enlargement in axilla. At the operation, breast and axillary glands removed. On the 4th day afterwards, erysipelas developed over the chest and left arm. Temperature remained continuously high during the next few days, patient gradually lost strength, and died of septicæmia 13 days after the operation. *Examination of tumour removed.*—Diameter about 3 inches, deeply excavated by ulcer. Portions of tumour 1 inch from the ulcer apparently undegenerated, but when placed on nutrient material with the necessary precautions in the incubator rapidly produced an abundant growth of micro-organisms. P.M.—Granulations of wound not healthy, thin discoloured pus covering them. Lungs natural. Thickening of aortic and mitral valves. Atheroma of aorta. Spleen diffuent. Liver fatty. Kidneys congested.

Recurrent growth in breast.—Females 10. C. 5, R. 2, U. 3. Recurrence occurring at 2 months 1; 3 months 1; 4 months 1; 6 months 1; 8 months 1; 11 months 1; twelve months 1; eighteen months 2; 3½ years 1 (too bad for operation). Seven cases were operated upon, 2 of the cases had undergone 2 operations previously, 2 cases were admitted for hæmorrhage. Recurrence in cicatrix 1; in cicatrix and axilla 5; in axilla 4.

Lower jaw.—Male, æt. 41. Five months ago swelling was noticed of right half of inferior maxilla. No family history of cancer. On admission a fungating growth was observed to occupy the right half of the alveolar process; teeth projecting through it. Alveolar process removed partly by forceps, and partly by scraping. Gland at angle of jaw was not touched. Five days after operation left hospital.

Palate.—Female, æt. 23. No previous or family history of importance. Three years ago noticed hard lump in roof of mouth. On examination tumour about size of bantam's egg occupying roof of mouth; more of it is to the left than to the right of the median line. Some enlargement of left lobe of thyroid gland. Tumour removed with ease, firm and nodular; part of hard palate absorbed. *Microscopical examination.*—Squamous-celled carcinoma, ? benign. Left hospital 11 days later.

Skin.—Female, æt. 45. For 1 year has had some lumps forming in right groin. On examination ulcerated tract 7 in. by 3 in. is seen above the outer half

of Poupart's ligament, and above the iliac crest, freely movable over external oblique, and has a very hard base. Numerous glands in groin involved, and numerous discrete scirrhus nodules in skin, above and to outer side of large ulcer. Advised against operation.

Rectum.—Males 3, females 6. R. 2, U. 1, D. 6.

Female, *æt.* 48, married. Had always enjoyed good health. Six weeks ago began to suffer from bearing-down pain in rectum, difficulty in defæcation and bloody stools. Hard, nodular, ulcerated growth just above sphincter, completely removed by operation; mucous membrane stitched to skin. Eight days later patient left hospital against advice.

Female, *æt.* 44, married. Many months difficulty in defæcation, and blood with the stools; nothing felt *per rectum*. Vaginal exam.—Hard lump felt at back part of pelvic cavity, about the level of pelvic brim, quite immovable. Patient left of own accord after 18 days.

Female, *æt.* 31, married. Nine months an out-patient. Difficulty and pain in defæcation, stools mixed with matter and blood; occasional sickness and sometimes severe pain. Six months ago was in hospital, and a stricture in the lower part of the rectum was divided. Soon after admission excision of rectum attempted, but in consequence of hæmorrhage and numerous adhesions was abandoned. Three weeks later left lumbar colotomy was performed, to the great relief of the patient. Still much discharge and irritation about rectum. Six weeks after second operation patient left hospital, with the colotomy wound in a satisfactory state. She was gaining flesh and eating well.

Female, *æt.* 68, married. Bearing-down pain in rectum 12 months, and constipation or bloody stools. $4\frac{1}{2}$ inches within anus hard, ulcerated growth can be felt, movable and surrounds and constricts rectum. Abdomen slightly distended. Temp. 102° . Colotomy performed. Death a few hours later. Temp. 103° . No P.M.

Male, *æt.* 62. (See Special Table III). Pyæmia.

Male, *æt.* 42. Ten months ago bleeding from rectum noticed, since then occasionally copious. At times constipation and severe pain. On examination hard mass felt $3\frac{1}{2}$ in. above anus, more on left side than on right. Excision of rectum attempted, but growth not completely removed; urine passed by wound after operation. Two and a half months later lumbar colotomy performed. Patient gradually became more emaciated, and died 6 weeks after second operation. No P.M.

Male, *æt.* 68, labourer. Nine months pain in abdomen and blood and purulent discharge from rectum. On admission temp. 96° . Greatly emaciated, refused to be examined, died on sixth day. P.M.—Great omentum adherent to intestines; in flanks and in pelvic cavity much foul-smelling, turbid, yellow fluid; recent perihepatitis and perisplenitis; coils of intestines adherent; on breaking the adhesions here and there small collections of pus were discovered; 4 inches from anus was a new growth which had much narrowed the lumen of the gut; mass of new growth between bladder and rectum, and this had eaten through the rectal wall and caused a perforation 8 inches from anus. Other organs presented no morbid changes.

Female, æt. 61, married, 4 children, 5 miscarriages. Illness commenced 6 months ago, with severe diarrhœa, since which time she has suffered severe pain, and has often passed blood; has lost flesh, passes very small motions, occasionally involuntarily. On examination a hard, nodular mass growing from the anterior wall of the rectum, and extending from just within the anus to a higher point than the finger can reach. Pulse irregular, 120. Temp. 101·8°. Tongue dry and brown. Died 9 days after admission. P.M.—Intestines much distended, no peritonitis. Small intestine full of liquid, slightly blood-tinged fœces; mucous membrane œdematous, congested, and even hæmorrhagic in places; large intestine full of hard, slate-coloured, fœcal masses. Anterior part of rectum for 4½ inches infiltrated with new growth, deeply excavated on the rectal side, no narrowing of the gut. Spleen contained a large pink mass of new growth (see museum specimen). Other organs normal.

Female, æt. 37, married, 7 children, 3 miscarriages. Fifteen months ago first began to suffer pain and passed blood and pus *per rectum*. An ischio-rectal abscess shortly formed, which burst and has never healed. Complains of constant diarrhœa. On examination an unhealthy ulcer extending from rectum on to buttock is seen; sphincters apparently destroyed, defæcation involuntary, suppurating gland left groin, enlarged glands right groin, great emaciation, gums spongy. Temp. 97·6°; pulse 100. *Diagnosis.*—Carcinoma or possibly tubercle. No sign of disease in lungs. Colotomy performed, but patient died 3 days afterwards. Temp. 95·2°. Two slight hæmorrhages seemed to hasten the fatal termination. P.M.—Body greatly emaciated, large superficial ulcer surrounded anus and spreading back over coccygeal region; no sign of malignant disease or of tubercles in its floor. Caries of body of fifth lumbar vertebra and front of upper part of sacrum, intervertebral disc between uninvolved, abscess cavities on both sides of the pelvis in connection with the bone disease, and communicating by two openings with the rectum. Fallopian tubes and ovaries adherent to back of uterus, and distended with a soft, yellowish, thick fluid, apparently not pus. Right ureter blocked by inflammatory tissue around. Moderate dilatation of ureter and hydronephrosis above point of obstruction. All other organs healthy. Microscopical examination of the floor of the ulcer and of the affected area of bone disease did not reveal the presence of tubercle or other specific disease.

Esophagus.—Males 2, female 1. R. 1, U. 2.

Male, æt. 70. Dysphagia 12 months, can now only swallow fluids, rapid loss of strength and flesh, pain in chest during swallowing, œsophageal bougie passed, vomits occasionally, probably malignant.

Male, æt. 52. Difficulty in swallowing 5 months, and occasional vomiting; for 5 weeks only able to take fluids, and during this time has lost about 1 lb. a day in weight. Enlarged gland right side of neck, brings up blood sometimes. Bougie obstructed at lower end of pharynx. Dyspnœa 9 days after admission. Tracheotomy under cocaine. Sent to an infirmary after being some months in hospital.

Female, æt. 63, readmission. Old case of tracheotomy for malignant disease of ? pharynx and larynx. Enlarged glands in neck, much dysphagia, getting rapidly worse. In hospital 1 day.

Cervical glands.—Males 3. U. 3.

Male, æt. 55, veterinary surgeon. Seven months ago first noticed enlargement of right side of neck. On admission hard, indurated, glandular swelling on both sides of neck. Some hoarseness of voice and slight difficulty in swallowing. In hospital 7 days.

Male, æt. 50. Twelve months ago had epithelioma of lower lip removed. One month afterwards noticed lump in left side of neck; this has gradually increased; lip no recurrence; slight pain in swallowing solids. Refused operation. In hospital 6 days.

Male, æt. 70, readmission, after epithelioma of tongue, which was operated on 6 months ago. Recurrence in glands on both sides of neck, too extensive for operation. In hospital 2 days.

Pylorus.—Female 1. U. 1. Female, æt. 48, married. Twelve months pain in epigastrium, and has felt a hard swelling in the stomach. For 3 months vomiting after food, occasionally mixed with blood; when she was sitting up a distinct, hard, movable tumour could be felt in the pyloric region. Exploratory operation proposed; husband refused.

Peritoneum.—Female 1. R. 1. Female, æt. 55, married. Growing stouter for 6 months, abdomen gradually increased in size, and pain set in 3 months ago. On examination belly very tense and distended, girth 34 inches; uterus normal, some hard nodules felt in Douglas's pouch. Diagnosis not clear, possibly ovarian. Exploratory incision, intestines matted together with new growth, ? carcinoma or sarcoma; wound stitched up without further examination. Eleventh day after operation parotid bubo developed. Temperature raised for a short time to 105.4°. Left hospital on forty-second day. Sleeping and taking food well.

Bladder.—Males 3, females 2. R. 1, D. 4.

Female, æt. 33, married. Fifteen months ago began to suffer pain in bladder and to pass blood in urine. These symptoms continued, and she gradually lost flesh and strength. Shortly after admission, urethra dilated and tumour in part removed. Left hospital 3 weeks later still suffering from hæmaturia.

Fatal cases.

Male, æt. 79. Frequent micturition, bloody urine, and severe pain for 2 months. Died 6 days after admission. No P.M.

Male, æt. 67. Frequent micturition for 3 years; during last 12 months has lost control over urination and has frequently suffered pain and passed blood in water. On admission was extremely weak. Supra-pubic cystotomy was performed; bladder found full of new growth and fixed by a mass of growth in the right side of the pelvis. Patient died 10 hours after operation. Temp. 106.2°. No P.M.

Female, æt. 60. Symptoms of bladder disease 9 months. Bloody urine; pain and loss of flesh and strength. Three weeks after admission urethra dilated; floor of bladder found occupied by a hard new growth with a rugged, excavated surface; at the margin there were several polypi, one of which on microscopical examination showed the typical structure of alveolar carcinoma;

no attempt made to remove growth. Patient died 20 days later. P.M.—Base of bladder infiltrated by a malignant growth; inflammatory condition of rest of mucous membrane. Kidneys, suppurative nephritis.

Male, æt. 70. Two years ago began to pass blood in urine; patient admitted in a very exhausted state. Death on twelfth day. P.M.—Pericardium adherent all over; left ventricle hypertrophied; general atheroma of large arteries. Bladder dilated and hypertrophied; it contained blood-tinged urine, and a lot of gritty sabulous matter, several small calculi, and one as large as a cherry; mucous membrane covered with an adherent layer of triple phosphates; over entrance of left ureter was a tumour the size of a florin, probably carcinomatous; ureters moderately dilated. Suppurative pyelitis and nephritis.

Epithelioma—

(a) *Inguinal glands.*—Male 1. C. 1. Male, æt. 47. Readmission after amputation of penis. Glands extirpated.

(b) *Finger.*—Female 1. C. 1. Female, æt. 70. Nine months ago noticed small swelling over second phalanx of third right finger. Two months ago this was removed in operation room, and said to be a sebaceous cyst; the present growth seemed to start in the cicatrix of this operation. Finger removed at metacarpo-phalangeal joint.

(c) *Upper jaw.*—Male 1. D. 1. Male, æt. 55. Four months ago left half of upper jaw began to enlarge, and on applying at Dental Hospital was told he had a tumour. Few days after admission removal of upper jaw. Patient died on tenth day of septic pneumonia. No P.M.

(d) *Kidney.*—Male 1. D. 1. Male, æt. 53. Ten weeks noticed tumour in abdomen, increasing in size. On admission elastic fluctuating tumour in right loin and extending as far forwards as umbilicus; urine contained albumen and blood; patient much emaciated. Incision in loin; trocar withdrew at first considerable quantity of yellowish fluid, not transparent. Examination showed blood, pus, albumen, and epithelium from pelvis of kidney. Later on some dirty-brown fluid came away, making in all about 27 oz. The cyst and remains of kidney were then enucleated; not much kidney substance was left. Several calculi were found, and a whitish growth, which microscopical examination proved to be epithelioma. Death third day after operation, from which he never rallied. P.M.—Peritoneum uninjured in right loin from which kidney had been removed; no peritonitis. Cæcum adherent to connective tissue behind it, which was much thickened, probably by new growth. Ligature on right ureter secure. Left kidney moderately hypertrophied. Glands in portal fissure infiltrated with the new growth, and there was a similar small mass in the right lobe of the liver. (See 'Path. Soc. Trans.,' vol. xxxix.)

(e) *Bladder.*—Males 4. C. 1, R. 2, U. 1 (1 readmission).

Male, æt. 47, readmission. Supra-pubic cystotomy performed twice on this patient, for first villous and subsequently epitheliomatous growth (see 'Clin. Soc. Trans.,' vol. xx). Admitted now for return of hæmorrhage and pain. In hospital 1 month. Six weeks later patient came in again with slight hæmaturia and continuous pain; some difficulty in walking, and there was an evident secon-

dary growth on the left side of the pelvis, involving the hip-bone. He left again after 2 months' residence.

Male, æt. 68. Pain and difficulty in micturition 5 years; for some months has passed blood constantly, and has lost flesh. On admission bladder distended and catheter blocked by clot. Perineal section was therefore performed; large mass of new growth, partly ulcerated, felt in viscus, could not be entirely removed, though a large quantity was, and sent to the museum (see mounted specimen). Three months afterwards patient left hospital much improved, having no pain, passing blood occasionally.

Male, æt. 60. For 2 years has passed blood in the urine, and occasionally suffered severe pain. Shortly after admission supra-pubic cystotomy was performed, and a large mass of growth removed, mostly attached to the left side of the lower part of the bladder (see museum specimen). Six weeks afterwards he left the hospital greatly relieved; urine clear and contained no blood.

(f) *Tongue*.—Males 11, females 4. C. 7, R. 2, U. 5, D. 1. Duration of disease before admission 1 month 1; 2 months 2; 3 months 2; 4 months 2; 5 months 2; 6 months 1; 7 months 1; 8 months 1; 9 months 1; 12 months 1, and 4 years 2. Part implicated: tongue and floor of mouth 4; ditto and inner surface of cheek 1; ditto and soft palate 1; gum involved 1; 1 case was recurrent; the glands were enlarged in 10 cases, and removed in 2. Scissors were used in all the cases (9) operated on, and in 2 of these the thermo-cautery also; in 1 case the jaw was divided, 1 case the cheek split, 1 case division of gustatory, and in 1 case both the lingual arteries were ligatured before the removal of the tongue. Five cases were too bad for operation, in 1 case the whole organ was removed, the left half in 5 cases, the right half in 2, and in 1 case the right half and tip.

Fatal case.—Male, æt. 69. Four months ago was bitten on the tongue, sores never healed; lately it has extended and caused a foul discharge. On admission patient emaciated, unable to take fluids or to sleep; slight enlargement of glands. Lingual arteries ligatured as preliminary to removal of tongue; scissors employed, scarcely any bleeding. Seven days later, after operation, he died of septic pneumonia. No P.M.

(g) *Rectum*.—Male 1, female 1. R. 1, U. 1.

Female, æt. 47. Excision of rectum had been attempted at another hospital; now extensive recurrence of growth. No treatment. In hospital a few days.

Male, æt. 52. Twelve months ago began to suffer from tenesmus, and motions were covered with slime and blood. On examination just within sphincter posteriorly and on the left side is a hard, nodulated, irregular, ulcerating growth. *Operation*.—Tumour easily removed, but in attempting to extirpate a string of infected sacral glands, sharp hæmorrhage came on, which necessitated the abandonment of the endeavour to make the operation complete. Left the hospital fairly comfortable 6 weeks later.

(h) *Nose*.—Male 1. C. 1. Male, æt. 67. Six months ago patient noticed a wart on the left side of the nose; this has gradually increased, until on admission it was the size of a sixpence, with a sloughy surface; no enlarged glands. Extirpated with knife. Microscopical report, epithelioma. Attack of erysipelas a few days after operation.

(i) *Tonsil and pharynx.*—Male 1. C. 1. Male, æt. 69. Ten weeks ago first had difficulty in swallowing. *Operation.*—Preliminary tracheotomy; Trendelenburg's tube used; cheek split; growth removed with écraseur and scissors. No sign of recurrence when he left the hospital 24 days after operation.

(j) *Cheek.*—Males 5, females 1. C. 4, U. 2.

Male, æt. 63. Noticed 1 month soreness at angle of mouth. On examination epithelioma of angle of mouth and inner surface of cheek. Removal with a knife. Erysipelas. Recovery.

Male, æt. 45, readmission. Growth again removed. Cured.

Male, æt. 45. Noticed ulcer for 9 months on inner surface of cheek. On admission epithelioma of angle of mouth and inner surface of cheek. Removed with the knife.

Male, æt. 58. Four years ago was bitten on the cheek by a man; wound never healed. Ten months ago sore about size of shilling excised; now deep excavated ulcer size of five-shilling piece with indurated edges; freely cut away with the knife. Granulating surface on discharge.

Male, æt. 45, readmission. Previous operation; now no interference possible on account of extensive disease.

Female, æt. 37. Seven months before noticed hard lump in right cheek; this has rapidly extended and ulcerated; glands involved. Partial facial paralysis. No operation possible.

(k) *Lip.*—Males 6. C. 5, R. 1.

Male, æt. 70. Epithelioma of left half of lower lip, growing 2 years. Glands enlarged at angle of jaw. *Operation.*—V-shaped portion removed.

Male, æt. 70. Recurrent. V-shaped incision; harelip pins. In hospital 6 months ago. (Lower lip.)

Male, æt. 72. Recurrent; 5 months ago in hospital; growth now along whole length of lower lip. Complete removal and successful cheiloplasty.

Male, æt. 82. Two years' growth; left side of lower lip. V-shaped incision, &c.

Male, æt. 71. Epithelioma of right side of lower lip. Growing 8 months. Extirpation with knife and subsequently cheiloplasty was successfully performed.

Male, æt. 51. Recurrent, last operation 6 months ago. Growth now at right angle of mouth and inside cheek; removal with knife. Mucous membrane brought together with catgut, skin with silk. Had an attack of delirium tremens; recovery.

(l) *Scalp and skull.*—Male 1. R. 1. Male, æt. 62, readmission. Large rugged ulcer on vertex; dura mater exposed; scraping, and $ZnCl_2$ paste.

(m) *Skin.*—Female 1. D. 1. Female, æt. 72. Widow; 6 months ago patient noticed lump like a marble in the sole of her foot; this soon ulcerated; has been losing flesh and strength. On admission circular sore size of halfpenny in centre of sole of right foot. Glands in groin enlarged; ulcer, freely removed, also affected lymphatic glands. Died 12 days after operation. Temperature had been continuously high. *Microscopical examination.*—Epithelioma of sole of foot and femoral glands; squamous celled; portions of the glands were placed on nutrient material in an incubator, and an abundant growth rapidly developed; hence glands had suffered an inflammatory as well as malignant infection. P.M.—

Lungs hyperæmic and œdematous; heart small; thickening of valves and atheroma of aorta. Liver large and soft; many disseminated hæmorrhages of recent occurrence were to be seen in the cortex of the kidneys; organs generally exhibited condition of cloudy swelling (see 'Lancet,' 1888).

(n) *Lower jaw.*—Males 3. C. 2, U. 1.

Male, æt. 43. Epithelioma of gums and lower jaw; numerous glands involved; no interference possible.

Male, æt. 31. For 10 months patient has suffered much pain in left side of lower jaw. On admission this area and floor of mouth occupied by growth; submaxillary region infiltrated, lymphatic glands involved. *Operation.*—Most of horizontal portion of jaw removed, and all other infected parts. An attack of erysipelas 8 days after operation. Left hospital cured in 45 days.

Male, æt. 70. Recurrence after removal of epithelioma of lip 6 months ago; right side of jaw involved; glands enlarged; tumour removed with the outer-lamella of bone to which it was attached.

(o) *Penis.*—Males 2. C. 2.

Male, æt. 52. Five months ago noticed a sore on the glans near the meatus. On examination hard growth surrounds meatus. Amputation by ordinary method; subsequently he had an attack of pneumonia.

Male, æt. 45. Six months sore; gradually increasing in size; amputation by ordinary method; inguinal glands slightly enlarged; removed 6 weeks later.

Rodent ulcer.—Males 3. C. 2, R. 1.

Male, æt. 60. Had sore for 2 years size of florin; left temporal region now covered with adherent scab; ? tubercular ulceration or rodent ulcer. Refused excision; improved under Ung. Acidi Salicylici.

Male, æt. 56. Recurrent several times; side of nose, $ZnCl_2$ paste applied.

Male, æt. 49. Recurrent several times, of cheek; excised.

Malignant of neck.—Males 2. U. 1, D. 1.

Male, æt. 65. Had jaw removed for "cancer" 6 months ago; now extensive involvement of cervical glands.

Fatal.—Male, æt. 67. Fourteen months ago noticed small swelling in right submaxillary region; rapidly increased, until on admission the whole side of neck was involved in an irregular growth of a stony hardness adherent in every direction; patient entered hospital in a semi-conscious state. Died on the sixth day. No P.M.

Sarcoma—

(a) *Mamma.*—Female 1. C. 1. Female, æt. 38. No hereditary history; 2 years ago had a cyst incised in right breast; wound never healed; lately a swelling has again appeared in old situation; amputation performed; growth cystic sarcoma.

(b) *Thyroid.*—Males 3, females 1. C. 3, D. 1 (1 readmission).

Male, æt. 41. Three months noticed collar felt tight; 2 months noticed swelling in region of right lobe of thyroid; shortly after admission extirpation of right half of thyroid; much difficulty in separating it from carotid sheath and trachea. Microscopically, spindle-celled.

Male, æt. 42. Five years ago noticed hard lump right side of neck; rapidly

increased last few months. On admission large tumour 6 × 4 in., irregular in outline, occupying position of right lobe of thyroid; larynx displaced to the left; some difficulty in breathing and swallowing. *Operation.*—Tumour removed with difficulty; much venous bleeding; internal jugular vein was lying in a groove on the posterior surface of the growth, adherent to thyroid cartilage and trachea. Microscopically, spindle-celled.

Two months later patient readmitted; recurrent growth partly ulcerated, size of large orange; tumour removed chiefly by scraping; carotid sheath, digestive tube and trachea invaded. *Laryngeal examination.*—Right cord moves very little; larynx displaced to left, and considerably rotated on its vertical axis. Growth seen in pharynx and on right aryteno-epiglottidean fold.

Female, æt. 41, married. Eighteen months ago noticed swelling left side of neck, which has lately markedly enlarged; occasionally great dyspnœa. On admission thyroid enlarged, especially right side and isthmus. *Laryngeal examination.*—Nothing abnormal detected. *Operation.*—Removal of enlarged isthmus and nearly the whole of the right lobe; much hæmorrhage; antiseptics; tumour on removal showed several cysts with calcified walls, and much apparently normal thyroid tissue. At several points, however, masses of more firm, whitish growth were visible, and on opening a large vein which traversed the isthmus, its lumen was seen to be filled for an inch with this white growth. Microscopically, spindle-celled. Patient did badly after the operation, suffered from fever and extensive suppuration, became unconscious on the fifth day, and died on the seventh day. Temperature 106°. P.M.—Suppuration along fascial planes of neck; pus offensive; no thrombi in vessels of brain; acute suppurative pleurisy left; slight pleurisy at apex of right lung; thrombosis of right innominate vein and superior vena cava.

(c) *Pharynx.*—Male 1. U. 1. Male, æt. 18. Breathing through nose completely stopped 12 months. On admission nodular growths felt with finger blocking posterior nares; glands involved on each side of neck; attempt to remove post-nasal growths abandoned in consequence of profuse hæmorrhage; glands in neck removed, but rapidly recurred; frequent bleedings from the mouth; rapid loss of strength and flesh; sent ultimately very ill to an infirmary.

(d) *Mediastinal glands.*—Male 1. D. 1. Male, æt. 50. Six months swelling lower part of neck, and some shortness of breath; transferred to Medical Ward, where he died. For P.M. see Medical Notes; new growth partly blocking superior vena cava.

(e) *Foot.*—Female 1. C. 1. Female, æt. 46. Growth of plantar surface of right foot, now ulcerated; noticed first 7 months ago. Extirpation with a knife; evidently growing from plantar fascia; no microscopical examination; tumour mislaid.

(f) *Neck.*—Male 1. U. 1. Male, æt. 67. Seven years ago swelling of right side of neck, first appeared; now there is an enormous tumour occupying this situation and adherent to everything; no operation possible.

(g) *Testis.*—Male 1. C. 1. Male, æt. 34. Swelling noticed first 10 months ago, on right side; castration. Microscopically, degenerating round-celled.

(h) *Pelvis.*—Male 1. R. 1 (readmission). Male, æt. 5½. Recurrent round-celled sarcoma of ilium and whole stump after amputation at hip-joint.

(i) *Thigh*.—Male 1. D. 1. Male, æt. 55. Twenty-five years ago noticed small tumour of the thigh; gradually increased; now very large indeed, situated over the front and inner side of the thigh and originating from the intermuscular fascia. Varicose condition of veins of limb; removal by dissection; numerous large veins passing into tumour had to be ligatured; antiseptics; weight of tumour $4\frac{3}{4}$ lbs.; naked-eye examination, like a soft fibroma. Microscopically, spindle-celled sarcoma. After operation, temperature rose to 105° ; patient soon became delirious; profuse sweating; two severe rigors; death on the thirteenth day. P.M.—Lungs congested. Heart large, otherwise healthy; spleen large and soft; blood-staining of inner surface of aorta and large arteries, probably indicating septicæmia.

(j) *Skin*.—Male 1. C. 1. Male, æt. 55. Melanotic of buttock; 11 months' history; excision.

Femur.—Males 2, female 1. C. 3.

Male, æt. 30. Osteo-sarcoma of lower end of femur, growth noticed 4 months, amputation through thigh, shaft of femur sawn longitudinally in theatre, growth, which was periosteal in origin, was then seen to have infected the medulla much above the external limit of the tumour, hence it was determined to at once disarticulate at the hip. This was done by an external incision; portion of bone thus removed showed that the osteoid growth had extended as high as the small trochanter. Four days later hæmorrhage occurred from the stump. The common femoral artery was ligatured by means of a clove-hitch, with kangaroo tendon; coats of the vessel were not ruptured (see 'Clin. Soc. Transactions,' vol. xxi).

Male, æt. $5\frac{1}{2}$. Thigh amputated last year for round-celled sarcoma of femur, now recurrence in stump, disarticulation at hip-joint performed. (Readmitted later on, see "Sarcoma of Pelvis.")

Female, æt. 17. Tumour of lower end of right femur noticed 6 months, losing flesh and strength. Amputation of thigh at junction of upper and middle third. Convalescence retarded by suppuration, and the projection of the end of the femur through the anterior flap. Microscopically, spindle-celled (see museum specimen, C. 277). During convalescence a ferule of bone necrosed at end of stump, and was removed (see museum, C. 158²). No recurrence up to date, 21 months since amputation.

Humerus.—Male 1. C. 1. Male, æt. 21. Tumour noticed 6 months, hereditary history of cancer, amputation at shoulder, growth a typical osteoid sarcoma. No enlarged axillary glands.

Upper jaw.—Male 1, female 1. C. 2.

Male, æt. 15. Tumour noticed 5 months, now attached to alveolar process of upper jaw, left side. *Operation*.—Lip slit, portion of alveolar process involved removed with bone forceps. Microscopically, myeloid.

Female, æt. 67. Small growth attached to left nasal process, growing some months, admitted for hæmorrhage after an attempt at removal in out-patient room.

Lower jaw.—Males 2, females 1. C. 3.

Female, æt. 33. Patient has had a swelling, gradually increasing in size, of right lower alveolar process, where formerly she had a carious second bicuspid

and first molar tooth; tumour removed with bone forceps. Microscopically, myeloid.

Male, æt. 20. For 1 year or more suffered from abscess and swelling of left side of lower jaw. *Operation.*—Removal of left side of lower jaw. The body of the bone and alveolar process was expanded and filled with a firm white growth; in the centre of the growth a sequestrum was found (see 'Path. Soc. Trans.,' vol. xxxix).

Male, æt. 34. Was in hospital in 1884–85 for spindle-celled sarcoma of lower jaw; third operation (tumour has been noticed about 3 months, now about the size of small orange), lower jaw sawn through at angle; ramus, condyle and coronoid process removed, outer surface of tumour encapsuled, inner surface adherent to outer surface of ramus, cancellous tissue extensively invaded, but inner plate of ramus intact. Wound healed on discharge.

Fibro-myoma of uterus.—Females 7. C. 1, R. 5, U. 1.

Female, æt. 36, single. Seven years ago noticed a small movable lump about the size of a hen's egg in the right side of the abdomen; gradually increased in size, and she has had attacks of severe pain accompanied with nausea or vomiting, frequent micturition, some loss of power in right leg. Catamenia regular until 7 months ago, when the flow became excessive. On admission girth at umbilicus 31 in., passes very little urine, bowels open with difficulty. *Operation.*—Incision wound 6 in., afterwards extended upwards, tumour easily raised out of pelvic cavity and drawn through abdominal wound. It consisted of an irregular dumb-bell-shaped mass, and included both ovaries with the uterus, one adhesion to omentum, pedicle formed by cervix transfixed by 2 pins, and constricted by wire écraseur, spray, antiseptic precautions, surface of stump touched with solid perchloride, and fixed outside abdominal wound. Weight of parts removed 2 lbs. 11½ oz. No shock after operation; convalescence unimpeded.

The 6 other cases were not operated upon; 5 were married women, and 1 single. Of the 5 married, 1 had 9 children, 1 had 1 child, and 3 had never been pregnant; history of tumour respectively 7 months, 18 months, 2 years (2), and 7 years. Menorrhagia and metrorrhagia in 4 cases, 1 case catamenia, not excessive. Much difficulty and pain in micturition, 1 case; 2 cases œdema of lower extremities; uterine cavity in 2 cases 3 in. and 6½ in. respectively; not reported 3 cases; 1 case loss of flesh and strength, possibly ovarian. *Treatment.*—One case sent out, scarlet fever in ward, to come in again; 3 cases ergot, &c., to return for operation if necessary; 1 case, æt. 52, history of seven years, rapid growth for 18 months, flatulence and pain, refused operation. One case, single, tumour noticed 2 months, uterus normal length, pain and gastric disturbance. To return for operative interference if symptoms increase.

Papilloma of larynx.—Males 2, females 2. C. 2, R. 1, D. 1 (2 readmissions).

Male, æt. 2½. For some time parents had noticed difficulty of breathing, especially in foggy weather. On admission inspiratory dyspnoea, retraction of ribs, tracheotomy performed at once; subsequently on laryngeal examination a whitish growth was seen filling the trachea; 4 months after the tracheotomy, thyrotomy was done, the trachea being plugged with a tampon canula during the operation; much of the new growth was removed with forceps and scissors, and then the halves of the thyroid cartilage were sutured with silk; the operation

did not give much relief; 5 months later the thyroid was again split, growth very extensive, removed thoroughly with forceps, scissors, and cautery; sponging also effectually removed some of the growth; it extended upwards to the pharyngeal aspect of the epiglottis; 15 days later the tracheotomy tube was removed and the child was quite comfortable, and could breathe through his larynx. One month after the second thyrotomy the child left the hospital; but 2 months later he was again admitted with some symptoms of obstruction, and whilst preparations were being made to open the trachea again the boy died asphyxiated. P.M.—On opening larynx entire mucous membrane studded with pale warty growths, extending as high as the lower half of the posterior surface of the epiglottis, vocal cords almost concealed by growths, lumen of larynx much narrowed, no enlarged glands, some interlobular emphysema of lungs, no other abnormal signs.

Female, æt. 2½. Since the age of 4 months, the child has lost its voice, and has occasionally difficulty in breathing. In out-patient room some papillomatous growth was removed by cutting forceps. Tracheotomy 4 days after admission; subsequently transferred for scarlet fever; 1 year after admission thyrotomy performed; the cricoid was also split; the whole of mucous membrane of larynx from base of epiglottis to trachea was studded with papillomatous outgrowths; these were removed with scissors, and the surface seared with cautery; the vocal cords were not distinguished in the general papillomatous mass, and were probably removed, as they were not to be seen at the close of the operation. Hahn's tube was introduced into the trachea before the larynx was opened. Thirteen days after the operation the tracheal tube was removed; and 27 days afterwards the child left the hospital, breathing without difficulty through the larynx, and able to carry on a whispering conversation.

Villous tumour of bladder.—Males 1, females 2. C. 2, D. 1.

Male, æt. 54. Hæmaturia for two years; attacks of bleeding last some weeks and then pass off. On admission supra-pubic cystotomy performed; pedunculated papilloma discovered attached above and in front of the opening of the right ureter; removed with wire *écraseur*. Microscopically, simple papilloma; specimen in museum (see 'Lancet,' July, 1887, and St. Thomas's Hospital Museum for specimen).

Female, æt. 58. Hæmaturia on and off for six years; no pain as in last case; dilatation of urethra; extirpation of tumour with wire *écraseur*; size equalled that of a Tangerine orange. Microscopically, simple-papilloma; specimen in museum (see 'Lancet,' July, 1887, and St. Thomas's Hospital Museum for specimen).

Female, æt. 61. Three and a half years hæmaturia occasionally; the day after admission urethra dilated under ether; growth not removed in consequence of smart hæmorrhage and feeble state of patient; died 7 days after admission. P.M.—On left side of bladder is a soft, pinkish, papillomatous growth, attached to the mucous membrane by a broad pedicle; no visceral disease; bronchial glands caseous; no enlarged glands found in abdomen.

Exostosis.—Males 7, females 2. C. 8, R. 1. Subungual 3, noticed 2, 9, and 18 months respectively; all removed. External auditory meatus 1, in a male æt. 30; symptoms nine months; cancellous; attached three quarters of the cir-

conference of canal; removed by dental drill. One of humerus in a lad \ae t. 14 , operated upon twice. One of frontal bone noticed 4 to 5 years; removed; and one of femur, noticed 6 months; removed.

Myxoma.—Female 1. C. 1. Female, \ae t. 72 , married. Twelve months ago noticed a small hard lump about the middle of the front of the thigh. On admission a globular swelling size of cricket ball, hard, tense, and elastic, freely movable, and apparently attached to deep fascia just above middle of front of thigh; antiseptic operation; wound healed by first intention. Microscopically, myxoma; cells mostly stellate; naked-eye appearance of cut surface of tumour darker in colour than an ordinary myxoma.

Nævus.—Males 2, females 5. C. 2, R. 3, U. 1, D. 1.

Female, $\text{\ae t. 4}\frac{1}{2}$. Lower lip and chin; cutaneous and subcutaneous; partly ulcerated; Paquelin's canterry.

Female, \ae t. 14 weeks . Front of chest; cutaneous and subcutaneous; no operation; death.

Female, \ae t. 5 months . Left scapula; cutaneous and subcutaneous; dissected out.

Female, \ae t. 3 . Upper lip; subcutaneous; electrolysis twice.

Female, \ae t. 9 months . Back; cutaneous and subcutaneous; sent out, scarlet fever in ward.

Male, \ae t. 3 months . Pinna and side of face; cutaneous and subcutaneous; ulcerated; thermo-canterry.

Male, \ae t. 4 years . Lip and inner side of cheek; submucous; galvano-canterry wire.

Fatal case.—Female, \ae t. 14 weeks . Large nævus over right pectoralis major, mostly subcutaneous. Temperature suddenly rose to $104\cdot2^{\circ}$, accompanied with severe diarrhœa; child died in 30 hours from onset of febrile attack. P.M.—Body well nourished, all viscera normal except stomach and intestines, which contained pellets of slightly yellow mucus; there were patches of congestion in the small intestine, and some prominence and redness of the solitary and agminated glands; no swelling of abdominal lymphatic glands.

Cysts.—Males 8, females 6. C. 11, R. 1, U. 1.

Forehead—

Male, \ae t. 8 months . Dermoid, root of nose; taken out against advice. (Had been treated with electrolysis, as it was thought to be a nævus.)

Male, \ae t. 16 . Dermoid; external angular process; removed.

Scalp.—Male, \ae t. 38 . Serous; median line; lambdoidal suture; after injury; excision.

Labium.—Female, \ae t. 37 . Noticed $2\frac{1}{2}$ years; excision.

Upper jaw.—Female, \ae t. 40 . Noticed 10 years; incision; extraction of teeth.

Breast—

Female, \ae t. 40 . Right breast; serous; incision; drainage.

Female, \ae t. 47 . Left breast; mucous; glairy, yellow, translucent; incision and drainage.

Ranula.—Male, æt. 11. Mucous; noticed 3 months; silver wire as a seton.

Neck—

Male, æt. 51. Sebaceous; parotid region; size of small orange; excision.

Three cases dermoid. Males 2, females 1, ages 19, 20, and 21. One median line thyro-hyoid space; 1 right submaxillary region; 1 submaxillary median line, under mylo-hyoid. All three excised.

Two cases require notice more in detail:

Male, æt. 52. Cyst of shoulder, probably bursal in origin; 12 months ago pain in right shoulder after getting very wet, since then gradual increase in size, especially in front; limitation of movement of arm; gave up work 6 weeks ago. On admission cyst aspirated, 18 oz. of pale, straw-coloured fluid, sp. gr. 1022, with HNO_3 became solid from albumen.

Female, æt. 51, married. Hydatid of kidney (right); 7 months ago noticed a swelling in right loin, accompanied with tenderness of surface and constant pain. On admission fluctuating tense swelling found in right lumbar region; urine normal. Four days later incision in right loin was made; this was followed by evacuation of a large quantity of dark-coloured matter of the consistence of gruel, and mixed with numerous hydatid cysts and shreds of membrane. Patient left the hospital on the thirtieth day quite well, but with a small sinus, from which there was very little discharge.

Ovarian disease.—C. 11, R. 1, D. 6 (1 readmission).

Female, æt. 37, widow. No family history of the disease; never before had a serious illness; had one child; two months before admission noticed swelling of the abdomen, chiefly on the right side. On admission girth at umbilicus 37 inches; resonant in flanks, evidently a fluid tumour, no solid material felt; distance from umbilicus to left anterior superior spine 8 inches, same to right anterior superior spine 7 inches. *Operation.*—Three-inch incision; 11 pints of dark reddish-brown fluid drawn off with trocar from cyst; no adhesions; pedicle long, ligatured with silk after transfixion. On examining the other ovary (left) it was found to be cystic, and was therefore removed. The parts removed consisted of one large cyst and several small ones; no trace of ovary could be found, though the Fallopian tube could be followed for some distance over the cyst. Convalescence was retarded by occasional sickness and flatulence and a temperature of 101° ; the lower part of the wound suppurated. Discharged cured 39 days after operation.

Female, æt. 26, single. Two years ago, when lifting a heavy weight, she felt a sudden pain in the right iliac region. One year ago noticed a swelling in the same place; this has increased until the abdomen reached its present size. On admission an elastic spheroidal fluid tumour can be made out, extending from the right flank to the left of the umbilicus as far as a vertical line running through the left anterior superior spine, and from the pubes to just below the costal margin. Over this area there is a distinct fluid thrill; no solid material felt; catamenia normal. *Operation.*—Four-inch incision; trocar inserted; $5\frac{1}{2}$ pints of fluid removed; no adhesions; pedicle secured as usual with silk; the other ovary (right) was found to be slightly enlarged and cystic and was therefore extirpated. Parts removed, fluid clear straw colour; no remains of ovary discovered; Fallopian tube elongated and attached to surface of main cyst

tumour composed of one large cyst and several small ones near broad ligament; convalescence unimpeded; catamenia noticed 3 days after the operation; discharged cured 22 days after operation.

Female, æt. 22, single. Tumour noticed 6 months. *Operation.*—Three-inch incision; cyst contained 10 pints of fluid; one adhesion to mesentery; much ascitic fluid in belly; pedicle secured with silk; weight of solid portion of tumour 2½ lbs.; opposite ovary (left) healthy; convalescence unimpeded; patient did not pass water naturally for 8 days after the operation; discharged cured 22 days after operation.

Female, æt. 44, married. Family and previous history unimportant; 18 months ago noticed that she was becoming stouter. On admission a feeble, emaciated, nervous woman. Abdomen projected forwards by a cystic tumour; girth at umbilicus 33 inches; umbilicus was one inch further away from the right anterior superior spine than from the left. *Operation.*—Incision wound 3 inches; trocar brought away 10 pints of yellow, transparent fluid, and later a small quantity of grey, thick, opaque, mucoid material. One adhesion to a loop of small intestine; this was tied in sections with catgut and divided; pedicle secured with silk; the tumour was a multilocular cystoma of the left ovary; the right ovary on palpation appeared to be normal, and was not interfered with. Patient did well after the operation, except that she did not urinate naturally for 7 days. Length of scar 2½ inches. Discharged cured 23 days after operation.

Female, æt. 23, married, two children, the last twelve months ago. Six months ago noticed a lump in the abdomen. Catamenia regular since last confinement until 7 weeks ago. On examination a distinct movable tumour can be felt in the right iliac region, and another, apparently separate from the former, in the median line just above the pubes. *Operation.*—Incision 3½ inches; median tumour found to be the pregnant uterus (about fifth month). The tumour on the right side was an ovarian cyst about the size of a cocoa-nut. It was filled with dark brown gelatinous fluid, had a long pedicle, and there were no adhesions; the pedicle of the cyst was secured in the usual way with No. 4 silk. Patient made an uninterrupted recovery; after leaving the hospital (29 days after the operation) pregnancy continued to term, but during parturition she died of hæmorrhage for lack of timely and skilful assistance.

Female, æt. 31, married, no children, married at 15. Readmission this year, came from Valparaiso. Family history of phthisis, has had ague several times. Present illness commenced 2½ years ago after a severe blow on the abdomen. On admission abdomen apparently uniformly distended and bulging forwards. Girth at umbilicus 33 inches; resonance in both flanks. Uterus displaced to the left; cavity of normal length. *Operation.*—Incision wound 4 inches subsequently enlarged upwards. Trocar evacuated considerable quantity of dark, dirty-brown fluid, the tumour being multilocular. The various cysts were successively tapped. Firm adhesions to the intestine had to be divided; pedicle ligated with silk. On examining the other ovary (left) another cystic tumour was discovered. It contained clear pale yellow fluid, it was much more adherent and more difficult to remove than the cyst in connection with the right ovary. Operation lasted 1½ hours. Patient discharged cured 94 days after operation. For some time after the operation patient's recovery was retarded by a persistent

daily rise of temperature which was treated with quinine. On the tenth day from the operation an abscess was found to have discharged spontaneously into the dressing from the lower part of the wound.

Female, æt. 54, single. For 6 years she had a peculiar sensation of great coldness (like a block of ice) in the right side of the lower part of the belly. The day before admission she had an attack of severe pain accompanied by vomiting and inability to micturate. On admission a large fluctuating tense tumour can be felt occupying the abdominal cavity, but not extending so far on the right side as on the left. Girth at umbilicus 29 inches. *Operation.*—Incision 3 inches, afterwards extended upwards. Trocar was then used, clear yellow fluid evacuated, several adhesions had to be ligatured and divided. Right ovary examined and found healthy. Pedicle transixed and ligated with silk. Cavity of abdomen irrigated with boracic acid solution. No rise of temperature after operation, convalescence uninterrupted. Left hospital 32 days after operation.

Female, æt. 47, married, 6 children, 1 miscarriage. Two years ago noticed enlargement of abdomen, the swelling being a little to the right of the umbilicus. Catamenia regular till 18 months ago. Since then scanty and irregular. On admission girth at umbilicus 40 inches; abdomen greatly distended, evidently with a fluid tumour. *Operation.*—Incision 4 inches. Fifteen pints dark coffee-coloured fluid drawn off with the trocar. Wound then enlarged upwards. Several adhesions between cyst wall and great omentum were tied and divided between catgut ligatures. Left ovary examined and found normal. There was one cyst and 3 lbs. 14 oz. of solid material which formed the tumour. Discharged cured 18 days after operation.

Female, æt. 25, single. Catamenia regular. Eight years before noticed a tumour in the lower part of the belly which caused her a great deal of pain and discomfort. Eighteen months ago it began to grow rapidly, and then the pain disappeared. On admission girth at umbilicus 34½ inches, ordinary signs of ovarian cystic tumour. *Operation.*—Incision wound 3 inches. Large cyst containing 12 pints of transparent dark yellow fluid. No adhesions; no bleeding. Pedicle secured with silk after transfixion. The tumour consisted of one large cyst, one the size of a cocoanut, and several smaller ones. The appendages on the left side were healthy. Weight of tumour after removal 1 lb. 13 oz. Convalescence unimpeded. Discharged cured 21 days after operation.

Female, æt. 32, married, 6 children, last child born 4 months ago, since which time she has noticed something wrong with the abdomen; during the last fortnight the abdomen has rapidly increased in size. On admission girth at umbilicus 38 inches; uterine cavity 3½ inches in length. Uterus behind cyst. *Operation.*—Unilocular cyst; no complications. ? Parovarian. Notes defective. Temperature normal after operation. Discharged cured in 22 days.

Female, æt. 34, single. Catamenia regular, but great pain at periods. Some years ago could feel a lump at the lower part of the belly at the left side. On admission the abdominal tenderness made it very difficult to make a proper examination. Exploratory operation decided upon. Incision 2½ inches, which had subsequently to be lengthened. Right ovary cystic about the size of a large orange, and containing light-brown translucent fluid; it was adherent to surrounding structures. Pedicle transixed and ligatured with silk. The left ovary and Fallopian tube were then extirpated in a similar manner, but with greater

difficulty in consequence of the matting of parts and the numerous adhesions. Operation occupied $1\frac{1}{2}$ hours. The day afterwards the temperature rose to $102\cdot6^{\circ}$, and the abdomen was a little distended. There was a good deal of suppuration about the lower part of the wound, the amount of pus being greatest about the ninth day. Discharged cured 50 days after operation. Patient was of a neurotic temperament, and the temperature, even up to the day she left the hospital, constantly rose to 100° or 101° .

Fatal cases.

Female, *æt.* 52, married, 4 children. Three years ago had an ovarian tumour removed. Two years ago noticed again enlargement of the abdomen, and 6 months later an exploratory incision was made at a special hospital. During the last few months she has been suffering from cough, loss of flesh and strength, and rapid enlargement of the abdomen. On admission ordinary signs of cystic fluid tumour. Uterine cavity of normal length. *Operation.*—Incision through old cicatrix 4 inches. Cyst adherent in front to omentum, not to abdominal wall. Pedicle tied in two halves with No. 4 silk. A phlebolith about the size of a small bean was removed from the broad ligament beneath the main ligature. The tumour was growing from the left side. There was no sign of stump or appendages on the right side. The tumour weighed 4 lbs.; it was multilocular, and the fluid that was removed from it was dark, viscid and opaque, and 7 pints in quantity. The same evening temp. 103° , pulse 140. During the next few days there was slight distension of the abdomen, flatulence, a little rise of temperature, and a weak and rapid pulse. Three days before she died she was troubled with considerable diarrhœa, and on dressing the wound each stitch puncture was suppurating. Two days before death she commenced vomiting and was extremely restless, and 12 hours before death the abdominal wound was opened up, a glass tube inserted as far as Douglas's pouch, and irrigation carried out with warm boracic solution, which returned clear. Death took place on the seventh morning after the operation. P.M.—Recent adhesions between upper surface of liver and diaphragm, between loops of small intestine, and between various structures in pelvic cavity. In Douglas's pouch and in lumbar regions some reddish-brown pus was found; large intestine distended. Between rectum and the periuterine connective tissue was an abscess without apparently any outlet. There was no sign of ligatures on the right side of the uterus from whence the tumour had been removed at the previous operation. All other organs healthy.

Female, *æt.* 23, single. Five years ago suffered from pains in the left side of the abdomen, especially at the catamenial periods. Two years ago the abdomen began to get larger, and has been increasing in size ever since. Menses regular; has lost flesh during the last few months. On admission girth at umbilicus 31 inches, and abdomen evidently occupied by a cystic tumour. *Operation.*—Incision 2 inches; trocar evacuated a large quantity of milky-looking, glairy fluid, no adhesions; pedicle secured by silk; left ovary healthy. The tumour consisted of one large cyst and several smaller ones near its point of attachment. The same evening temp. $95\cdot4^{\circ}$; pulse rapid and feeble. Lips blanched, restlessness, and some pain in lower part of belly. During the night patient was sick several times, and the following morning she was extremely weak, but she looked less pale, and the temperature had risen to 100° . Her condition, however, did not

improve, she was constantly retching, and she died on the fourth day after the operation. P.M.—On opening abdomen a large quantity of black clot was found in the pelvis and other dependent parts of the belly; coils of intestine stained with blood. No peritonitis. The silk ligature was firmly fixed on the stump, but there was a rent in the broad ligament extending towards the uterus from the point of transfixion by the ligature. This was the source of hæmorrhage; much blood extravasated between the layers of broad ligament, and in the retroperitoneal connective tissue on the right side of the pelvis.

Female, æt. 22, single. The tumour was first noticed in the abdomen 12 months ago. It then occupied the left iliac fossa and has since grown until it seems to fill the whole abdomen. On admission girth at umbilicus 37 inches; no bulging in flanks. Right flank more resonant than left. Uterus drawn up and directed more backwards than normally. Distinct fluid in every direction on palpation. *Operation.*—Incision 3 inches, afterwards enlarged upwards. Trocar used, 16 pints of fluid withdrawn. No adhesions. Pedicle secured with silk. The tumour weighed after removal 2 lbs. 6¼ oz.; it was attached to the left side of the uterus. The day after the operation the patient began to suffer from cough and much purulent expectoration, the temperature rose to 102·2°, there was some abdominal pain, but no distension. The condition became each day more hopeless, the temperature varying between 102° and 105·6°, and the strength of the patient gradually diminishing. She died on the eighth day, the thermometer registering 109°. P.M.—No hæmorrhage in abdominal cavity; no peritonitis. Pedicle of left ovary firmly secured by a ligature. Pelvis of kidneys dilated; medullary portion partially absorbed; cortex healthy. Lungs, hæmorrhage recent into right lower lobe. Other organs cloudy swelling.

Female, æt. 48, married, 7 children. Catamenia regular up to 2 years ago. Twelve months ago noticed she was getting stouter, had some pain in the right side of the abdomen. On admission a cystic swelling discovered occupying the lower part of the abdominal cavity; uterus pressed backwards by tumour, cavity normal in length. *Operation.*—Incision 4 inches; trocar withdrew 10 pints of straw-coloured fluid. No adhesions. Numerous secondary cysts. Pedicle transfixed and ligated with silk. Right ovary healthy. Patient, though feeble, seemed to be doing well until 2 days after the operation, when cough set in. Temperature rose to 101°, and later still to 103°. There was a good deal of pain in the abdomen, and the tongue became dry and brown. Death ensued on the fourth day. P.M.—No peritonitis. Lungs markedly emphysematous and congested, and pus exuded from the cut bronchial tubes. All other organs free from disease.

Female, æt. 47, married, 5 children. Three years ago patient noticed a tumour in her belly. Three months ago it began rapidly to increase in size, attended by acute pain of a stabbing character. Catamenia regular until 2 years ago. On admission it was evident that the abdominal cavity was occupied by a large cystic tumour. *Operation.*—Incision 3 inches; 13 pints of fluid drawn off by trocar; no adhesions. Left ovary healthy. The tumour consisted of 1 large cyst, and 1 or 2 smaller ones close to the point of attachment. The same evening temp. 103·2°; pulse 160. The next morning the temperature was still high, the abdomen slightly distended and the patient retching. Her strength was soon exhausted, and she died on the third day, with a temperature of 106·6°.

Twenty hours before she died the abdomen was opened and irrigated. There was some blood about, but the pedicle seemed perfectly secured by the silk ligature. P.M.—Recent peritonitis in lower half of abdomen and in pelvis; small intestines united by recent lymph, some turbid, blood-stained fluid in Douglas's pouch; old perihepatitis and perisplenitis; œdema of right lung. Other organs, cloudy swelling.

Female, æt. 55, married, several children. Menstruation regular until 10 years ago. Seven months ago noticed a lump in the abdomen, which gave her some pain and inconvenience; it gradually increased in size. On admission abdomen occupied by a cystic tumour, girth at umbilicus $37\frac{1}{2}$ inches. *Operation.*—Incision $2\frac{1}{2}$ inches; 10 pints of thick, brownish fluid withdrawn by trocar. The pedicle came from the left side of the uterus, and was transfixed and secured by thick silk ligatures. The right Fallopian tube was adherent to the tumour, as was also the descending colon. The solid part of the tumour after removal weighed 3 lbs. $10\frac{1}{2}$ oz. After the operation patient went on well for some time, though the temperature was slightly raised, and there was considerable pain in the abdomen, but she was very weak, and from some unknown cause her condition was not completely satisfactory. She died on the twentieth day, having suffered from diarrhœa for 5 days previously. P.M.—Body emaciated. Some coils of small intestine adherent to one another, to the sigmoid flexure, and to the remains of the broad ligament on the left side. On disentangling the adherent parts a few ounces of pus were discovered in the pelvis near the pedicle; pelvic glands infiltrated with new growth, as were also the posterior mediastinal glands; the growth was white in colour, firm in consistence, but in parts it was yellow and hæmorrhagic. Liver contained very many masses of similar growth, a few larger than a walnut. In the right kidney and in both lungs were similar growths.

Note.—All these cases were ordinary ovarian cystomata, with the exception of one, which was possibly of parovarian origin. In 4 cases both ovaries were the seat of cystic disease, and therefore both were removed. In one case one ovary had been removed for cystic disease 3 years before. The operations were in all cases done under the spray, the dressings consisted of iodoform or carbolic gauze and salicylic wool. The pedicle ligatures were in all cases of silk and were cut short.

In all cases but one the abdominal cavity was cleansed with sponges, and in this one case boracic irrigation was used as well.

In 2 of the fatal cases the abdominal wound was opened up, and the belly irrigated with boracic solution 2 or 3 days after the operation.

DIGESTIVE SYSTEM.

Hernia.—(See Special Table I).

Intestinal obstruction.

Male, æt. 42. Constipation 2 years, accompanied on some occasions with nausea and abdominal pain; 3 weeks ago obstruction became almost complete, and the sickness more constant. On admission abdomen tympanitic; tongue dry. Temp. 97° , &c. Left lumbar colotomy at once performed; no tumour could be felt *per rectum*. Left hospital 6 weeks later in fairly good health, and artificial anus in satisfactory state.

Male, æt. 68. Has had complete obstruction and continuous vomiting for a week; much abdominal pain; and during the last few months has lost flesh and strength. Abdomen distended; left lumbar colotomy at once performed; no stricture could be felt *per rectum*. Patient died 4 hours after operation. P.M.—Twenty inches from anus was a distinct ring of soft new growth admitting tip of finger; not ulcerated; nearest glands infected; intestine above growth much thinned and dilated, below contracted; 1 small nodule of new growth in liver other organs natural.

Male, æt. 35. Ten years ago operated upon for strangulated hernia; 2 days since was seized with severe pain in belly, constant vomiting, distension of abdomen, and no action of bowels for 48 hours. On admission symptoms continued. Pulse 140, temp. 97°. Skin damp from perspiration, countenance anxious, indicative of great pain and distress; large scrotal hernia down, but can easily be reduced; 12 hours after he entered the hospital, the abdomen was opened in the median line, with the idea that there was some internal strangulation. When the peritoneum was opened a large quantity of turbid fluid escaped. The omentum and intestines were deeply congested, and there was much lymph about. The omentum was entangled in a most unusual way around the coils of small intestine, and was unravelled with difficulty and had to be divided in many places between ligatures; no band was discovered, or other cause for the obstruction; abdominal cavity irrigated with warm boracic lotion, and then the wound was closed. Patient died a few hours after the operation. P.M.—General acute peritonitis, much recent lymph about, and a few hæmorrhages. A small quantity of bile-stained fluid was seen in the abdomen, and there was extensive yellow discolouration of the under surface of the liver; a rounded perforation three lines in diameter was found on the anterior aspect of the duodenum, immediately beyond the pylorus. The hole was a perforation in the floor of an ulcer, the edges of which were thickened and raised; it measured $\frac{1}{2}$ inch long by $\frac{1}{4}$ inch transversely; the floor was formed by the peritoneal coat. Heart large; lungs emphysematous; other organs normal.

Acute peritonitis.—Male 1. D. 1 (see also case immediately preceding). Male, æt. 11. Family and previous history good. Five days ago had a rope tied round his waist in order to draw a cart; suffered shortly afterwards from pain in the right iliac fossa and vomiting. On admission constipation, distension and tenderness of abdomen, especially on right side; nausea, thoracic breathing; pulse rapid and feeble. Treatment by opium and anodyne applications. Died on the 6th day after coming into the hospital; before the end, diarrhœa, delirium, restlessness and vomiting were incessant, and distinct dulness was noted on percussion in the right iliac fossa. P.M.—Intestinal coils matted together by recent adhesions; much pus in dependent parts; perforation of vermiform appendix, where it joined the cæcum; no concretion discovered; some collapse of right and left lower lobes of lungs. Other organs normal.

Chronic peritonitis.—Male 1. R. 1. Male, æt. 40. Has not been in good health for some years. Four days before admission pain and swelling of abdomen. When he entered the hospital there was a purulent discharge from the umbilicus; the abdomen was occupied on the left side by a hard, tender, semi-fluctuating

mass. Temp. 102·8°. He continued for a couple of months much in the same state. He occasionally had a shiver. Transferred ultimately to the medical side (Arthur Ward) ? tubercular peritonitis.

Stricture of rectum.—Females 6. C. 4, R. 2 (1 case admitted 3 times).

Female, æt. 25. Symptoms 4 years, stricture 3 in. above anus, incised. No history of syphilis.

Female, æt. 27, married. Symptoms 3 years, worse during last 4 months; stricture 3 in. above anus; 2 fistulæ. *Operation.*—Stricture divided and fistulæ laid open. Doubtful history of syphilis.

Female, æt. 26. Symptoms 18 months; history of dysentery; stricture 2 in. above anus, incised under ether.

Female, æt. 26. Admitted for stricture; hæmorrhoids and fissure as well; probably syphilitic; shortly after entering surgical ward scarlet fever developed; 3 months later was again admitted, and the stricture freely divided, and later on the operation was repeated owing to tendency to contraction.

Prolapsus ani.—Males 2. C. 1, D. 1.

Male, æt. 15 months. Prolapsus 1½ in., reduced under chloroform; no cause discovered; sounded, no stone.

Male, æt. 66. Prolapsus; painful and troublesome for years; hæmorrhoids also; aortic regurgitation; transferred to medical side, where he shortly afterwards died.

Colotomy for supposed malignant disease of pelvis.—Female 1. C. 1. Female, æt. 36, single. Family history of cancer; previous history good. Seven weeks before was seized with severe pain in abdomen. On admission patient thin and anæmic, complaining of pain about umbilicus; vomiting and constipation; belly distended, distinct fluid thrill; crepitations at the apices of both lungs; pulse 130, temperature normal; tenderness and resistance in right iliac fossa, *per rectum* and *per vaginam*; uterus fixed; fluid in Douglas's pouch. Left lumbar colotomy performed in two stages; subsequently fæces escaped in apparently equal amounts by the colotomy wound and by the rectum; tenderness and hardness on right side of abdomen increased; 1 month after operation had an attack of erysipelas; she was transferred to the infectious block, remained there 4 weeks, and then returned to the surgical ward. The ascites had disappeared and fluctuation could be felt in right iliac region; the uterus was still fixed by a hard mass at the pelvic brim; an incision was made above Poupert's ligament on the right side, and a lot of pus was evacuated. Her general health then greatly improved, and she was sent to Eastbourne Convalescent Home. Later on in the year she was readmitted in very good health, and the signs of pelvic inflammation had all passed away. Plastic operation was then undertaken for the closure of the colotomy wound, which was practically successful. Patient left the hospital for the seaside with only a small sinus remaining, through which a trace of fæcal matter came about every second day. There was every reason to hope this would shortly close.

GENITO-URINARY SYSTEM.

Tubercular testicle.—Males 3. C. 2, R. 1.

Male, æt. 29. Family and previous history good. Two months ago noticed increase of size of right testicle. On examination irregular enlargement of right testicle and epididymis, with impending suppuration at one or two spots. Lungs apparently healthy. Castration.

Male, æt. 3½. Amputation of thigh for tubercular disease of knee 18 months before; caries of mastoid during last few months; gradual enlargement of right testicle during the previous six weeks. Castration. On bisecting the testicle after removal, the upper half of the gland had a gelatinous unhealthy appearance; the lower half was occupied by an abscess filled with caseous pus.

Male, æt. 29. Right testicle enlarged 3 years; nodular induration of epididymis. On admission much tenderness of the parts, and also of lower part of abdomen; left testicle had been previously removed for similar affection. Family history of phthisis, and the patient is evidently also suffering from the disease; sent to an infirmary.

Hydrocele.—Males 10. C. 8, R. 2. None congenital; all of tunica vaginalis. Left 7, right 3. *Duration.*—2 months 1; 6 months 3; 2 years 1; 3 years 1; 4 years 1; 7 years 2; 14 years 1. Previous tapplings 9, twice tapped 2. *Treatment.*—Injection iodine 1; antiseptic radical cure 6; simple tapping 2 (in 1 case two pints removed). *Complications.*—Injury to testicle 1; eczema of scrotum 1; orchitis 1; suppuration with a temperature on one occasion of 105·8° 1 case, and 1 case radical cure had previously been performed, and was admitted on account of reaccumulation.

Varicocele.—Males 17. C. 17. Antiseptic excisions 15; collodion (because so slight) 1, and 1 case incision of scrotum and no varicocele found. In all cases spray used and iodoform and salicylic wool dressings. *Complications.*—Orchitis 3; inflammatory induration 3; slight suppuration 6, and slight rise of temperature in 7 cases; in 1 case hæmorrhage occurred some days after operation, stopped by plugging wound, and in 1 case free suppuration and shivering; temp. 103·4° (incision of scrotum).

Gonorrhœa.—Females 37. C. 34, R. 2, U. 1. *Complications.*—Furuncle 1; labial excoriations 5; 1 case had been in hospital with syphilis before; tonsillitis 7; bubo 1; miscarriage in hospital 1; induration of glands of groin 5; soft chancre 7; scabies 1; warts 8; fissure of anus 1; erythema nodosum 1; slight gonorrhœal rheumatism of right elbow 1; gonorrhœal synovitis of left elbow 1; acne 1; labial abscess 2; left ovaritis 2; ischio-rectal abscess 2; inflammatory swelling of labium 2. Usual treatment $ZnCl_2$ gr. x ad ʒj.

Ovaritis.—Females 3. C. 1, D. 2. Female, æt. 19, single. Had left ovary and tube removed 12 months ago for hydrosalpinx. Patient now complains of paroxysmal and agonising pain in lower part and right side of abdomen, worse at the catamenial periods and during defæcation. Catamenia regular but scanty; uterus slightly retroverted; much pain when the finger reached the right fornix, where a semi-elastic oval swelling could be felt. *Operation.*—

Incision 3 inches made through old cicatrix; attachment of right ovary transfixed and ligated, and the organ removed. Spray, iodoform gauze, salicylic wool. Ovary was cystic, about twice the normal size. Fallopian tube healthy. Nothing to note about convalescence except that the temperature rose occasionally above normal, and that the patient appeared to suffer a good deal of pain in the abdomen. The punctures made by the sutures suppurated.

Fatal cases.

Female, æt. 29, single. Catamenia scanty, painful, and irregular; has been losing flesh for some months. She complains of constant and severe pain in the lower part of the abdomen; cannot sleep at night; uterus normal in length; great tenderness evinced during examination; right ovary felt prolapsed and very tender; pain in micturition and defæcation; much tenderness on palpation of lower part of abdomen. *Operation.*—Incision 4 inches; difficulty in reaching ovaries on account of rigidity of recti; both ovaries contained small cysts, and both tubes were dilated; pedicles transfixed and ligated with silk; abdominal cavity irrigated with a concentrated solution of boracic acid at 100° F. Spray, iodoform gauze, &c. Before 3 days had passed she died. Temperature after the operation rose rapidly to 103·8°, and ultimately reached 105·2°. The abdomen was not distended; there was a great deal of pain in it; the tongue soon became furred; she was very restless, and unconsciousness supervened some hours before death. P.M.—No peritonitis; tissues in and around pelvis were much bruised, and a good deal of blood was extravasated in the connective tissue; about 2 ounces of blood coagulated was found in Douglas's pouch; the uterus was retroflexed, and firmly bound down by adhesions; ligatures on pedicles secure; no gross lesion of any organs, but all were in the condition of cloudy swelling.

Female, æt. 33, single. Patient has suffered for 7 years from severe pain in the lower part of the abdomen; 21 months before the left ovary was removed at the Samaritan Hospital; this operation was not followed by any relief. She was admitted to have the other ovary removed. *Operation.*—Three-inch incision; removal of right ovary and tube; the ovary was studded with numerous cysts, and was several times its natural size; the pedicle was very short, and was ligated with difficulty with silk; spray, green protective, iodoform gauze, salicylic wool; 6 hours after operation temp. 98·4°. Patient pale, and complaining of abdominal pain. The next day temp. 102°, pulse 130; slight distension of abdomen and sickness; symptoms rapidly became more alarming, and she died on the fourth day, thermometer registering 103·4°. P.M.—Suppuration about wound and suture holes; abdomen not much distended; abdominal cavity contained much blood,—a pint was measured; inflammatory lymph between intestinal coils. On examining the pedicle from which the right ovary had recently been removed the silk ligature was found to have slipped, and the stump was covered with blood-clot. The pedicle of the left ovary, which had been removed many months before, was easily made out, and two silk ligatures which had probably encircled it were discovered on dissection encapsuled at its extremity. No gross disease of viscera elsewhere.

Stricture of urethra.—Males 45. C. 34, R. 8, U. 1, D. 2. Traumatic 7; after gonorrhœa 33; not stated 5. *Complications.*—Extravasation 2; retention

11; perineal abscess 6; ulcerative endocarditis 1; suppression of urine 1; gonorrhœal rheumatism (right shoulder and ankle) 1; double inguinal hernia 1; paraplegia 2; fistulæ 5; 1 or more rigors 7; catheter fever 1; ataxy 1; cystitis 1; hæmorrhage 1; carcinoma of rectum 1. *Treatment.*—Preprostatic perineal puncture 8; bladder irrigation 2; supra-pubic aspiration 2; internal urethrotomy 6; external urethrotomy 2; interrupted catheterisation 16; continuous catheterisation 16; incision of meatus 1; incision of abscess 6; refused perineal section 1. Left passing No. 15, 1; No. 13, 4; No. 12, 13; No. 11, 5; No. 10, 8; No. 9, 4; No. 8, 3; No. 7, 2; No. 6, 3 (Eng. gauge).

Fatal cases.

Male, æt. 40. Admitted with stricture and retention. Stricture situated 5 inches from meatus; nothing could be passed. History of 20 years with more or less difficulty in micturition; supra-pubic aspiration twice; preprostatic perineal puncture the day following entrance into hospital; catheter tied in; went on well for 3 weeks, when complete suppression of urine occurred after a severe rigor; temp. 106°. *Treatment.*—Tepid sponging and digitalis fomentations, &c.; in 24 hours he died. P.M.—Injury to wall of urethra 2 inches from meatus, and some blood extravasated into submucous tissue around; membranous portion of urethra hard and cicatricial, and just in front of this was a fibrous bridle passing across from side to side where there was no narrowing of the urethra; prostate normal; mucous membrane of bladder showed many large recent extravasations; nothing abnormal found in other viscera.

Male, æt. 43. History of gonorrhœa 20 years ago; signs of stricture for many years. On admission continuous catheterisation was carried out, but rigors occurred, and a perineal abscess formed which extended to the gluteal region. This was incised, and at the same time perineal section performed, the stricture being effectually divided and a large instrument passed. Patient seemed to be improving when a daily considerable rise of temperature was recorded, together with loud systolic murmurs over the heart, and a very rapid and weak pulse. A week later death occurred. P.M.—Ulcerative endocarditis; aortic and mitral valves extensively diseased; bladder, much congestion of mucous membrane; no other abnormal changes discovered.

Retention of urine.—Males 9. C. 6, R. 1, D. 2. *Cause.*—One readmission, 6 stricture; 1 caused by a drinking bout; 1 due to shock after a fall of 30 feet; 1 case (?) ruptured bladder; and 1 case (?) hæmaturia due to tumour, would not stay in hospital. *Complications.*—Hæmaturia 3; cystitis 2; rigors 2; suppurative nephritis and death 1. *Treatment.*—Bladder irrigation 3; interrupted catheterisation 4; continuous catheterisation 1; supra-pubic exploration and perineal section 1 case (P.M. typhoid). Left passing No. 12, 1; No. 10, 1; No. 9, 1; No. 8, 1; not stated 2.

Fatal.

Male, æt. 43. Has had a stricture for many years. Admitted with retention after a drinking bout, also bronchitis, albuminuria, and cystitis. Died in 4 days. P.M.—Heart hypertrophied. Bronchi contained muco-pus. Lungs emphysematous; a few patches of grey broncho-pneumonia in lower lobes. Membranous portion of urethra cicatricial; calibre much narrowed; prostatic urethra

dilated. Marked cystitis. Ureters dilated, containing pus-like fluid. Double pyelitis and suppurative nephritis. Left kidney more disorganised than right.

Male, æt. 33. Three days' history of difficulty in passing water. Day before admission 24 oz. of urine were drawn off in out-patient room by catheter. On admission abdomen very tender. Temp. 101·4°. Catheter withdrew only a little blood-stained urine. Diagnosis doubtful. Some fulness about pubes; ? extra-peritoneal rupture. Supra-pubic exploration followed by a Cock's puncture. Patient died 12 hours later. P.M.—Acute peritonitis; liquid fæces in abdominal cavity. Perforation of ileum 6 inches from ileo-cæcal valve; 5 Peyer's patches in neighbourhood of valve ulcerated; ulcers commencing to cicatrise; the perforation was the size of a threepenny piece. Spleen large, soft, and pulpy. No apparent abnormality of other organs.

Extravasation of urine.—Male 1. D. 1. Male, æt. 65. Admitted with extravasation into perineum, scrotum, and penis. History of stricture and alcoholism. Perineal section performed and several other incisions made. Charcoal poultices. Patient went on badly; hectic temperature, bronchitis, and very feeble, collapsing pulse. Died on the fifteenth day. There had been much sloughing of the parts where extravasation had occurred. No P.M.

Urinary fistulæ.—Males 6. C. 3, R. 1, U. 1, D. 1. Males, 5 of the fistulæ were perineal; 1 supra-pubic following cystotomy. *Causation.*—Stricture 1; 3 after perineal section for stricture (in 1 of these cases the perineal section was done at another hospital); 1 following supra-pubic cystotomy for tumour; 1 after lateral lithotomy. *Treatment.*—Perineal section 3; continuous catheterisation 1; plastic operation 1; bladder irrigation 1. AgNO₃ 1. *Complications.*—Rigors 1; hæmaturia 1; phthisis 1; albuminuria 1; and 1 case transferred to Ophthalmic for essential shrinking of conjunctiva.

Fatal case.—Male, æt. 44. Readmission after perineal section for urinary fistulæ. Urine offensive, and it all comes from the perineal wound. Nightly rise of temperature. Abundant crepitations over subclavicular regions on both sides. Much thick, yellowish-green, tenacious sputum. Patient gradually became weaker and died. P.M.—Body emaciated. Membranous urethra cicatricial. Bladder wall thickened and congested. Mucous membrane covered with a thick, white, adherent, flocculent material. At the fundus there was a large irregular opening which communicated with the rectum 5 inches above anus. Small abscess cavity between bladder and rectum. No peritonitis. Ureters slightly dilated. Kidneys apparently normal; above right kidney was a globular cyst 5 inches in diameter, containing straw-coloured serous-like fluid. Pleuræ universally adherent. Apices of both lungs contained several small round pus-containing cavities, and in the lower lobes there was extensive grey broncho-pneumonia.

Hypertrophy of prostate.—Males 12. C. 3, R. 8, U. 1. Ages 24, 40, 54, 62, 66 (2 cases), 69 (3 cases), 70, 72, and 77. *Treatment.*—Catheters 12; irrigation of bladder 11; supra-pubic aspiration 1. *Complications.*—Retention 6; cystitis 11; hæmaturia 1; 1 or more rigors 2; urethritis 1, and in 1 case there was a vesico-intestinal fistula, fæcal matter being passed with the urine.

The chief agents used during the year for bladder irrigation were boracic acid or boroglyceride, and in a few cases quinine.

Cystitis.—Males 6. Females 2. C. 4, R. 3, D. 1.

Males. Symptoms for 1 month 1; 2 months 1; 6 months 2; 2 years 1; 10 years 1. *Causation.*—Enlarged prostate 1; after gonorrhœa 1; 2 were old cases of calculus readmitted, and cause not known 2 cases. *Treatment.*—Four cases sounded=0; irrigation 5; perineal puncture 1; buchu and irrigation 1.

Females. Symptoms for 1 week 1; 3 months 1; cause unknown in 1 and in the other supposed to be due to excess of uric acid in the urine, irrigation in both cases; complication in 1 case, constipation.

Fatal case.—Male, æt. 75, readmission after lithotrity; 2 operations 2 years and 3 months ago respectively. Ever since last lithotrity has had cystitis. On admission much emaciated, diarrhœa, hæmaturia, and urine full of muco-pus. *Treatment.*—Boroglyceride irrigation; died on ninth day. P.M.—Bladder hypertrophied and dilated; contained ʒij of extremely offensive turbid urine, and 3 phosphatic calculi, each about the size of an almond; prostate much enlarged, especially middle lobe. Ureter and pelvis of left kidney a little dilated; both kidneys healthy. Lungs œdematous. Pleuræ adherent. Arteries at base of brain atheromatous.

Hæmatocele.—Male 1. C. 1. Male, æt. 40. Obscure history of injury 12 months ago. On admission large oval hard tumour right side of scrotum; diagnosis probably sarcoma. On incising tumour a brown opaque fluid escaped with old blood-clots, the wall being formed by a thick deposit of fibrin. Antiseptic radical cure carried out.

Renal calculus.—Males 3. Female 1. C. 2, R. 2.

Male, æt. 37. For 6 months history of right nephritic colic very severe. Sounded=0. To return if symptoms continued.

Male, æt. 20. For 7 months history of right nephritic colic. No tumour in loin. No calculus in bladder. To return if symptoms increase.

Male, æt. 21. Two months ago was seized with shivering fits and diarrhœa, and soon afterwards severe pain was experienced in the right lumbar region, and a swelling was noticed in the same situation. This has gradually increased. On admission fluctuating swelling in the right flank. *Operation.*—Lumbar incision; ʒxviij of pus evacuated. Calculus discovered in one of the calices of the kidney and removed; it was very friable and broke up during the operation, some fragments being passed subsequently on to the dressings. On leaving hospital patient was in good health but was passing urine through the wound in the loin.

Female, æt. 45. Severe nephritic colic (right) 6 months, also occasionally hæmaturia. On admission countenance anxious. Great tenderness but no tumour in right lumbar region. Much pus in urine. *Operation.*—Usual incision for kidney exploration. Organ seemed healthy, but calculus was detected in pelvis; this was extracted through an incision which was afterwards sutured. Patient did very well after the operation, and for 3 days before she left the hospital no urine had passed by the wound.

Vesical calculus.—Males 17. C. 13, R. 1, U. 1, D. 2. Male, æt. 4. Symptoms

for 6 months; calculus easily found with sound. Taken out by mother against advice.

Lithotrity.

Male, æt. 75, readmission. Lithotrity performed 2 years ago, has been passing "gravel" ever since last operation. Shortly after admission operation repeated. Fragments all washed out. Débris phosphatic. No bad symptom.

Male, æt. 29. When 8 years old had lateral lithotomy performed. Two weeks ago snffered from severe nephritic colic; a week later pain in micturition, hæmaturia, and other signs of calculus vesicæ. Lithotrite introduced blades separated $\frac{3}{4}$ inch; all fragments washed out. *Composition.*—Oxalate of lime.

Male, æt. 76, readmission for the seventh time. Has undergone lithotomy and lithotrity in all 6 times. On admission cystitis, pain, and frequency of micturition. *Operation.*—Lithotrity after irrigation of bladder with boracic solution. Calculus size of marble. Phosphatic.

Male, æt. 43. Six months ago severe nephritic colic. Shortly afterwards symptoms of stone in the bladder showed themselves. *Operation.*—Lithotrity after boroglyceride irrigation. Blades separated $\frac{3}{4}$ inch; oxalic acid calculus with a crust of phosphates.

Male, æt. 50. Signs of calculus for 3 months; no difficulty in operation. Uric acid calculus.

Lateral lithotomy.

Male, æt. 11. Symptoms of stone 2 weeks. Small oval stone removed, size of large marble, uric acid.

Male, æt. 27. Hæmaturia and pain in micturition, &c., for 9 months. Two stones removed; both with facets. Passing oxalate crystals in urine. Character of stones not recorded.

Male, æt. 34. Has passed "gravel" 9 years. For 3 years symptoms of calculus vesicæ. Stone measured after removal $1\frac{1}{4} \times \frac{3}{4}$ inches, smooth and oval and of uric acid. Patient left hospital with the perineal wound unhealed. The rectum was injured in the operation, and if a catheter was not passed much urine came through the perineum. Later on in the year the patient had a plastic operation performed, but without success.

Supra-pubic lithotomy.

Male, æt. 14. Symptoms of stone 11 months. *Operation.*—Bladder and rectum distended; bladder wound sutured with catgut; catheter not left in, slight escape of urine by wound. Nature and weight of stone not mentioned. Had been passing oxalates in his urine.

Male, æt. 6. Straining and pain in micturition for three months. *Operation.*—Rectum and bladder distended. Bladder wound sutured with fine catgut. Uric acid calculus small.

Male, æt. 23. Hæmaturia and other signs for 2 years. Incision $3\frac{1}{2}$ inches. Bladder incised between 2 silk stitches. Large stone lifted out of bladder with the help of a spoon, and another impacted in prostate was forcibly removed with the aid of forceps. Drainage-tube left in bladder. Day after operation

patient passed urine *per rectum*, and flatus through the wound. Complete recovery.

Male, æt. 8. Symptoms off and on for 3 years. *Operation.*—Bladder and rectum distended; small uric acid stone removed. Ten fine silk sutures placed in bladder wall. Two days after operation scarlet fever set in, but from the first, no urine came through the wound, and neither was it necessary to pass a catheter. He had a second attack of scarlet fever 2 months after the first, and after this a small abscess formed at the seat of wound; this was opened, and the boy made a complete recovery.

Male, æt. 9. Pain and other signs for 6 months. *Operation.*—Bladder and rectum distended. Oxalic acid calculus $1\frac{1}{2} \times 1\frac{1}{16}$ inches. No peritoneum was seen during operation. Bladder sutured; a little urine passed through the wound 2 days after operation. Had a catheter tied in.

Male, æt. 2½. Hæmaturia, &c., for 10 months. Bladder and rectum distended. Bladder incised between supporting silk threads for $\frac{3}{4}$ inch. Small stone removed. Wound of bladder sutured with silk. Wound healed by first intention; no catheter used.

Fatal cases.

Male, æt. 26. Pain at end of penis and hæmaturia, &c., for 18 months. Bladder and rectum distended previous to operation. Incision 3 inches long. Peritoneal reflection reached almost to pubes. Incision of vesical wall 1 inch in length, subsequently sutured with catgut. Calculus spindle shaped; $1\frac{3}{4} \times 1$ inch. Surface rough; urates and phosphates. Antiseptic precautions observed. Urine passed naturally after operation. Patient died of pelvic peritonitis on the third day, the symptoms coming on very soon after the operation with rise of temperature, abdominal tenderness and tympanites, and small rapid pulse, &c. P.M.—No injury to peritoneum could be detected; marked peritonitis in the pelvis. Some of the coils adherent by recent lymph, commencing peritonitis of the rest of the abdominal cavity. Bladder contracted; mucous membrane congested. Left kidney small, and consisted simply of an irregular sac, containing turbid, pus-like fluid. Left ureter thickened and dilated. No calculus or other obstruction found in ureter. Right kidney hypertrophied. Early suppurative nephritis. Other organs healthy.

Male, æt. 62. Pain, hæmaturia, and difficulty in micturition, gradually becoming more marked during the last 2 years. Five days after admission lithotripsy was attempted but failed, apparently in consequence of there being more than 1 stone. Two days later supra-pubic cystotomy was performed, after distension of bladder and rectum in the usual way. Two stones were found, 1 as big as a walnut, and the other about the size of a marble, but this had evidently been partly broken up by the lithotrite. Each calculus had a nucleus of oxalate of lime, covered with concentric layers of lithates, and these again by an outer shell of phosphates. When the calculi had been removed, a pedunculated tumour the size of a child's fist was found attached to the prostate; this was removed by the *écraseur*; it proved to be a fibroma, and is now mounted in the museum. Before the wound was closed a drainage-tube was passed into the bottom of the bladder. Subsequently there was much hæmorrhagic discharge, and death took place 50 hours after operation. P.M.—Early peritonitis, coils here and there adherent, cellulitis around bladder and in neighbourhood of

wound. Acute cystitis. Tumour was evidently attached to middle lobe of prostate. Acute pyelitis and suppurative nephritis. Heart hypertrophied. Aorta atheromatous. No disease elsewhere.

Urethral calculus.—Male 2. C. 1, D. 1.

Male, æt. 2. Calculus impacted in urethra near meatus; removed with forceps. Sounded = 0.

Male, æt. 69. Pain and difficulty in passing water for 18 months. Eight weeks ago fistulous opening formed in perineum; prostate enlarged; urine very foul. On admission the sound struck a calculus in the prostatic urethra. *Operation.*—Perineal section; several calculi removed from prostatic portion of urethra. After operation condition of patient became worse; there was tenderness over the bladder, vomiting, hectic, and much exhaustion. He lived only 10 days. P.M.—Small calculus found in wound. Bladder much inflamed, thick, rough, and slate coloured. There was a large sacculus in the posterior wall containing 2 calculi, $1\frac{1}{2}$ inches and 1 inch in diameter respectively. Ureters dilated. Pyelitis and suppurative nephritis. Other organs normal.

Floating kidney.—Female 1. R. 1. Female, æt. 32, married. Three months ago, whilst exerting herself, felt something give way in her right side, and since then has noticed a movable tumour in the abdomen. Some tenderness on pressure. *Treatment.*—A pad to fix the organ and to prevent external injury.

Pyosalpinx.—Females 2. R. 1, D. 1.

Female, æt. 33, single. Diagnosis right pyosalpinx. Left hospital for a fortnight and was readmitted. Case turned out to be on operation an ovary studded with small cysts. See case under "Ovaritis," fatal.

Fatal case.—Female, æt. 21, single. Catamenia scanty, irregular, and painful. Left cervical glands enlarged. Occasional purulent discharge from rectum for some years. A painful swelling in right iliac region. Uterus 3 inches. In the right fornix could be felt a hard solid, nodular tumour, moving with the uterus. *Operation.*—Incision $3\frac{1}{2}$ inches. Intestines matted together by adhesions from old peritonitis. Tumour in right half of pelvic cavity and right iliac fossa with great difficulty removed, owing to numerous adhesions. It was a tubercular ovary the size of a duck's egg, and pyosalpinx (see Museum, F. F. 51¹, and 'Path. Soc. Trans.' 1889). Pedicle ligatured with silk. Spray, iodoform gauze, &c. Abdominal irrigation. Glass tube passed down into pelvis and its end fixed in the lower part of the wound. After the operation patient did badly. First day temperature was subnormal, but it subsequently rose with some distension of the abdomen, sickness, and a small weak pulse. Death took place on the fourth day; temp. 103.4°. P.M.—Recent lymph about the intestines as well as firm old adhesions. No tubercles seen on peritonem. Ligatures on pedicle secure. On the left side of the uterus the appendages were much thickened, and the inflammatory changes were so numerous that the ovary could not be differentiated. In Douglas's pouch there was an abscess cavity the walls of which were partly destroyed; it communicated with the bladder, which was dilated and hypertrophied by an orifice $\frac{1}{2}$ inch in front and to the right of the right ureter, and also with the rectum by means of an irregular orifice, $\frac{1}{3}$ rd inch in diameter and 3 inches from the anus. Caseous glands in neck. Other organs healthy.

Pyonephrosis.—Female 1. C. 1. Female, æt. 55. For 10 years has had pain off and on in the left loin. Six years ago swelling formed in this region, which was tapped. Three years later tapping was done again. Relief was given for 18 months, when the old symptoms returned, and now there is a fluctuating tumour reaching forwards almost to the umbilicus. *Operation.*—Lumbar incision; much discoloured pus evacuated, not offensive in odour. No calculus found (patient had frequently passed pus with the urine). Patient was discharged cured in 34 days.

Hydronephrosis.—Females 2. C. 2.

Female, æt. 21. Nine months ago noticed swelling in right side of abdomen; this had been observed to come and go for several years. On examination a large fluctuating tumour in right lumbar region and a smaller one in corresponding position on left side. Right tumour aspirated twice (35 and 15 oz. withdrawn). After each puncture urine contained blood. The fluid removed was clear and of a light yellow colour. No reaccumulation after second tapping, and left tumour also disappeared.

Female, æt. 17. Five months ago noticed a swelling on right side of abdomen, hard and painful. On admission a fluctuating tumour reaches beyond umbilicus; outline bulging and irregular. Patient suffers much from sickness. Urine contains pus. *Operation.*—Incision in loin; 2 pints of urine-like fluid evacuated; it contained a quantity of cholesterin. No kidney substance could be felt. Drainage-tube, antiseptics. Thirty days later discharged cured, but there was still a small sinus discharging a small quantity of urinous pus.

Tuberculosis of kidney.—Female 1. C. 1. Female, æt. 22. Was quite well up to 2 years ago, when she had pain in left side of abdomen and lost control over her water; 10 months ago noticed a swelling in the left side, which was treated by incision; 10 ounces of pus evacuated. She left hospital relieved, but with irritability of bladder persisting; wound, however, has never healed, and lately the discharge has been more copious. *Operation.*—Left kidney removed; pedicle ligatured with silk; organ shelled out without much difficulty; it really consisted of 5 or 6 large abscess cavities, only a thin layer of cortical substance being left. She left the hospital cured 44 days after the operation, with only a very small sinus remaining in the loin. The average amount of urine passed during the last 3 weeks of her stay in hospital was 50 ounces.

Tuberculosis of bladder.—Male 1. R. 1. Male, æt. 23. Illness commenced 12 months ago with frequent micturition and hæmaturia. On admission symptoms of stone or ? tumour; sounded = 0; lithotrite failed to catch any fragments of tumour. Supra-pubic exploration was decided upon; nothing was found but some ulceration of the mucous membrane, which was thought to be tubercular; meanwhile signs of phthisis had shown themselves; patient had a hectic temperature, and his urine constantly contained pus and blood; he left the hospital ultimately in a dying state.

DISEASES OF JOINTS.

Multiple arthritis.—Males 2. R. 2.

Male, æt. 11. Patient admitted with caries of tibia and suppuration of knee; subsequently developed disease of left hip and right ankle; looked upon by

surgeon in charge as successive outbreaks of tuberculosis. *Treatment.*—Excision of hip; arthrectomy of knee and ankle. Left with wounds healed on the 283rd day.

Male, æt. 2½. Tubercular arthritis of right elbow, left ankle, and joints and bones of left tarsus; plaster of Paris.

Arthritis of elbow.—Males 5, females 3. C. 4, R. 3, U. 1 (1 case was a re-admission, and 1 was readmitted after arthrectomy for renewal of splint only), L. 3, R. 4. *Duration.*—Two months 2; 18 months 1; 22 months 1; 2 years 1; 3 years 1; 5 years 1. *Causation.*—One case supposed rheumatism; 5 cases tubercular. History of trauma in 3 cases. *Treatment.*—One case plaster splint and Scott's dressing; 1 case excision of joint; arthrectomy 3; 1 case sequestrotomy of lower end of humerus, and 1 case incision and drainage of joint and a plaster-of-Paris splint.

Arthritis of wrist.—Males 2, females 2. C. 2, R. 2. *Causation.*—One case after treatment of suppurating ganglion; trauma 1; wound from broken glass 1, and 1 case there was of tubercular diathesis (no injury). *Treatment.*—Amputation of forearm 2; excision 2; 2 cases were complicated by phthisis; 12 months' history in 2 cases, and 5 months and 2 years in the other 2 cases respectively.

Arthritis of hip.—Males 37, females 26. C. 6, R. 56, U. 1 (readmissions 13). 7 cases were old excision cases returned for further treatment; 1 case the neck of the femur had been divided 2 years before for ankylosis in bad position after disease of the joint. Left 35, right 28. History of trauma in 20 cases, and in 18 cases there was a family history of phthisis. *Duration of disease.*—One month 3; 2 months 5; 3 months 4; 4 months 4; 5 months 1; 6 months 3; 7 months 1; 9 months 2; 12 months 8; 14 months 1; 16 months 1; 18 months 3; 2 years 9; 3 years 6; 4 years 6; 4½ years 1; 5 years 3; 6 years 1; 7 years 1. *Treatment.*—Single Thomas, &c., 10; antiseptic incision of 1 or more abscesses 23; plaster-of-Paris splint 4; aspiration 2; excision of joint 10 (1 case great difficulty owing to ankylosis). Of the excisions, in 5 cases the disease was probably primary in acetabulum (2 cases doubtful), and 5 cases in which it was probably primary in femur; amputation at hip-joint 2; double Thomas and extension 24; long outside and extension 16; in 1 case of old hip disease which was partly ankylosed the sinuses were opened up and necrosed bone removed; leather splint supplied to 4 cases; in 1 case the chloroform symptoms were dangerous, and excision was postponed; 1 case refused excision, and 2 refused all treatment; 1 case treatment was only rest, no splint supplied; several cases were painted with iodine. All operations performed under strict antiseptic precautions; sinuses generally dressed with chlorinated soda lotion. *Complications.*—In 16 cases there were sinuses, and in 5 cases abscesses; arthritis of knee in 1 case; 2 cases suffered from phthisis, and 1 was transferred with scarlet fever; 1 case had albuminuria, consequently no operation was done; 2 cases contracted erysipelas and 1 röteln; strumous dactylitis 1 case; cerebral tumour 1 case, and 1 case lupus of skin over ankle and knee; 7 cases after treatment were sent to convalescent homes.

Arthritis of knee.—Males 16, females 14. C. 10, R. 18, U. 1, D. 1 (3 re-admissions). Family history of phthisis in 8 cases. Left 14, right 16. 15 cases

were distinctly tubercular; in 4 there was a history of trauma; 3 cases ? gonorrhœal in origin, and 2 ? rheumatic. *Duration of disease.*—One month 3; 3 months 1; 4 months 2; 5 months 2; 6 months 3; 7 months 1; 10 months 1; 12 months 5; 15 months 1; 18 months 1; 3 years 5; 2 years 2; 5 years 1; 6 years 1; 10 years 1. *Treatment.*—Four cases painted with iodine; McIntyre and Scott's dressing 1 case. In 5 cases amputation of thigh was done; all were adults with phthisis, and all certainly tubercular joints; in 3 of these the synovial membrane was alone diseased, and in 2 there was subarticular caries; McIntyre and icebag 4 cases; McIntyre and Scott's dressing 1; Scott's dressing and extension 1 case; arthrectomy 3 cases, in 1 of these the patella was sawn across; removal of carious bone from head of tibia 1; blistering 2; removal of subarticular caries from condyle of femur 1; extension and long outside 1; leather splint 2; plaster-of-Paris splint 15; 1 case refused amputation, and 1 case refused treatment. *Complications.*—Six cases had phthisis; tubercular meningitis 1; erysipelas 1; secondary hæmorrhage 1; 1 case had had opposite thigh amputated for same disease of opposite knee; [in 1 case there was infection of the opposite knee (right) whilst in hospital, and 1 case infection of right ankle whilst in hospital. Some cases were straightened under ether.

Fatal case.—Female, æt. 5½. Family history of phthisis; 3 months ago knee became swollen and flexed; for 3 weeks starting pains at night; 2 days before admission began to vomit all her food. On admission strumous disease of knee child very feeble; vomits everything; next day had several convulsions temperature subnormal; state gradually became worse; transferred to medical side; died on eighth day of tubercular meningitis. No P.M.

Arthritis of ankle.—Males 8, females 3. C. 5, R. 6. In 2 cases there was a family history of phthisis; history of trauma in 5 cases; 1 was a readmission, and 4 cases were distinctly tubercular. Left 5, right 6. Duration of disease 1 month 1; 2 months 1; 6 months 1; 11 months 1; 12 months 3; 2 years 1; 3 years 1; 5 years 2. *Treatment.*—Painted with iodine 1; arthrectomy 2; in 1 case arthrectomy, afterwards followed by Syme's amputation. Excision 1 case; Syme's amputation 1 case; incision of periarticular abscess 2; internal malleolus trephined 1; 3 cases put up in plaster-of-Paris splints; 1 in a Neville; 2 supplied with knee-rests, and 1 case refused treatment. *Complications.*—Sinus 1 case; 1 case secondary hæmorrhage occurred, and in 1 case there was a sinus of old empyema.

Acute suppurating arthritis.—Males 4. C. 3, R. 1.

Male, æt. 31. Eight days ago suddenly suffered acute pain in right knee; joint began to swell on admission. Temp. 101°; joint full of fluid, hot and red over inner side; the aspirator removed 5 oz. of turbid synovia. Two days later the joint was incised, irrigated, and drained. Went out well with some movement on the forty-ninth day.

Male, æt. 34. Family history of phthisis. Seven weeks ago pain and swelling of right knee occurred, and has gradually increased in severity; was tapped in out-patient room 3 weeks ago. On admission joint hot, swollen, tender, and full of fluid; movement very painful; redness of skin; fulness in popliteal space; glands in groin enlarged and tender; suspicious signs in lungs; aspirator with-

drew pus. Amputation of thigh decided upon. The examination of joint after removal showed the tubercular character of the disease, the synovial membrane having the characteristic appearance, and the internal condyle was partly carious.

Male, *æt.* 26. Nine weeks ago severe injury to the knee and surrounding parts. On admission knee distended with pus; incision and irrigation; 20 days later sharp hæmorrhage from external wound, controlled by pressure.

Male, *æt.* 7. Five days before admission shivering and pain in left foot, and a few hours later noticed that the ankle was swollen. Signs became more marked until admission. Temperature then 102°. Antiseptic incision and irrigation; recovery.

Old excision.—One case readmission after old excision of hip, deserves special notice. The operation was done 2 years before; there is still some discharge from the operation wound. The inguinal glands are enlarged, and evidently the seat of tubercular deposit; hectic temperature. *Operation.*—Removal of glands. Wound quite healed. Temperature became normal before patient left the hospital.

Anchylosis.—Males 13, females 4. C. 6, R. 10, U. 1. The cases of anchylosis of various joints were in most cases the result of arthritis of tubercular origin; in 3 there was a rheumatic history; and in 1 case the joint had been dislocated. Special notice may be taken of 1 case anchylosis of knee, for which Carden's amputation was done. One case anchylosis of knee, osteotomy of femur. In 1 case excision of elbow was performed in consequence of recurrence of active symptoms after forcible movement, and 1 case excision of elbow, in which the joint was anchylosed in the extended position.

Loose body in knee.—Male 1. C. 1. Male, *æt.* 17. Trauma 2 years ago. Has not been troubled much with the knee (right) until 2 months ago, when he had much pain and effusion in it. Two years ago had loose cartilage removed from the left knee. *Operation.*—Antiseptic removal. Cartilage was flattened about the size of a halfpenny, and almost exactly similar to what had previously been removed from the opposite knee. See specimen in museum.

Subluxation internal semilunar cartilage.—Males 3. C. 1, R. 2.

Male, *æt.* 51. Several times before suffered from the same accident. On admission knee swollen, very tender spot over cartilage on inner side. Displacement had occurred 3 days before. *Treatment.*—McIntyre, icebag, blistering.

Male, *æt.* 37. Eight years ago cartilage was first dislocated, has been out several times since. Present symptoms since previous evening. *Treatment.*—Reduction under ether; manipulation without anæsthetics failed.

Male, *æt.* 39, labourer. Trauma 3 weeks before; joint useless, as displacements frequently occur. Radical operation advised; when the joint was opened, the cartilage was found to have preserved its anterior and posterior attachments, but it had been torn loose from its intermediate connections. A tongue-shaped piece $\frac{1}{2}$ inch long projected from its upper surface. This had been partly torn from the upper surface of the cartilage. The cartilage was freed in front and behind and removed entire. See specimen in St. Thomas's Museum. Antiseptic precautions. Six months later patient was in full work again with a perfect

joint (see 'Clinical Society's Transactions,' vol. xxi, and 'British Medical Journal,' March 17th, 1888).

Gonorrhæal synovitis.—Males 3. Females 1. C. 2, R. 2. Knee: left 3, right 1. The left ankle and the opposite knee were also affected in 2 cases respectively. *Treatment.*—McIntyre 4; icebag 3; plaster of Paris 2; blistering 1; Scott's dressing and strapping 1; Mist. Pot. Iod. ordered in each case.

Synovitis.—Males 8. Females 7. C. 3, R. 12. Knee: left 6, right 9. History of trauma in 7 cases; 1 (?) gonorrhæal; 1 (?) tubercular; 1 (?) rheumatism; 1 (?) syphilitic. *Treatment.*—McIntyre 13; icebag 7; Scott's dressing 3; plaster splint 5; strapping 4; compresses of Lot. Plumbi cum Glycerini 2; iodine 1; blistering 1; gutta-percha splint 1; leather splint 1, and 1 case left hospital with a Martin's bandage around knee. *Complications.*—Ulcer of leg 1; gumma of forehead 1; lymphangitis 1. Ankle: Male 1. R. 1. History of trauma. *Treatment.*—McIntyre, icebag, and plaster splint.

CIRCULATORY SYSTEM.

Aneurysm.—Males 3. Females 2. C. 2, R. 2, D. 1.

Female, æt. 48. Twelve months ago noticed numbness of right hand and weakness of right upper extremity, and a few weeks later severe shooting pains occurred and occasionally some œdema. On admission right subclavian aneurysm. Aortic regurgitant valvular disease. Transferred to Medical Ward.

Female, æt. 18. Three weeks ago radial artery injured by the bursting of a ginger-beer bottle; treated as an out-patient; now aneurysm size of marble has developed. *Operation.*—Ligature of vessel above and below tumour; antiseptics; recovery.

Male æt. 45. History of syphilis. Present illness commenced 2 months ago with a hacking cough; his doctor found pulsating tumour above right clavicle. On admission pulsation above clavicle in episternal notch, and in the first two spaces between the upper ribs on the right side. Diagnosis, innominate aneurysm. No treatment.

Male, æt. 25. Four years ago aneurysm in left popliteal space, cured by ligature of superficial femoral. No history of syphilis. A week before admission whilst lifting a heavy weight he felt a cramp-like pain behind the right knee; he soon found a swelling the size of a hen's egg. This increased until on examination its transverse diameter was $3\frac{1}{4}$ inches and the vertical 3 inches. Digital compression tried for 12 hours without success; 10 days later artery ligatured at apex of Scarpa's triangle. Abernethian operation performed; silk employed for ligature; aneurysm consolidated at once. Sent to a convalescent home 40 days after ligation of artery (see 'British Medical Journal,' October 1st, 1887).

Male, æt. 40. History of alcoholism and syphilis. Two years ago noticed slight swelling right side of neck size of walnut; this gradually increased till on admission the swelling is the size of an orange. A good deal of dyspnœa but no dysphagia. *Treatment.*—*Nil.* Died with symptoms of great dyspnœa. P.M.—Walls of trachea thinned by tumour, so that the tube was almost perforated.

The aneurysm was a diverticulum from the upper part of the innominate artery, the rest of the innominate and subclavian arteries were dilated and aneurysmal. There was erosion of the front of the bodies of the first and second dorsal vertebræ. Aortic arch in an advanced condition of arteritis deformans; aortic orifice measured $3\frac{1}{2}$ inches. Right clavicle and upper part of sternum eroded by the tumour. Left pleural cavity obliterated by adhesions; right acutely inflamed. Lungs and liver were studded with tubercles. Other organs healthy.

Arterio-venous aneurysm.—Male 1. C. 1. Male, æt. 39. Two days before admission whilst cutting wood the knife slipped and entered the forearm just below the bend of the elbow in front. On examination distinct pulsating swelling was discovered just below the bend of the elbow. There was a marked thrill over the swelling, and this was transmitted more down the radial than the ulnar artery; it could also be felt in the great veins around. *Treatment.*—Flexion, Esmarch's bandage, and digital compression failed to effect any change in the aneurysm. *Operation.*—On dissection the tumour was found to be due to a communication between the deep median vein and the radial artery, just where the latter came off from the brachial. Radial and brachial ligatured simply with silk; ulna ligatured twice and divided between; veins also ligatured and tumour excised. Antiseptic precautions. Recovery (see 'Lancet,' 1888).

Phlebotaxis.—Males 13, females 6. C. 17, R. 1, D. 1. (For fatal case see Special Table III, Pyæmia.)

Case of septicæmia.—Female, æt. 18. Admitted with varicose internal saphena vein on left side. Operation under spray; 3 incisions and several inches of vein removed. A few days later temperature rose to 104° ; extensive suppuration set in; the veins of the limb as high as groin were very tender. A red blush spread over the extremity, and on the tenth day patient was transferred to the Erysipelas Ward. For a fortnight the temperature continued very high, and the patient was in a very critical state. On the twenty-sixth day the temperature was normal for the first time, and subsequently the patient made a slow recovery. She left the hospital on the 105th day.

Thrombosis.—Males 2, females 7. C. 5, R. 3, D. 1.

Fatal case.—Female, æt. 39, married, 16 children. Last child born 10 weeks before admission; 8 weeks ago legs began to swell, which prevented her moving out of bed, and during this time she scarcely had any food. On admission lower limbs enormously swollen; temp. 103.6° ; œdema of abdominal wall; superficial veins well marked out; pulse 130, feeble. Patient lived 6 days; gradually became weaker; several rigors occurred. P.M.—Legs enormous; œdematous distension; thrombosis of both femoral and iliac veins and right renal vein; uterus large and flabby; mucous membrane congested; ovaries normal; no periuterine inflammation; kidneys large and soft; many hæmorrhages in cortices; other organs in a state of "cloudy swelling."

Hæmatoma.—Males 18, females 5. C. 17, R. 4, D. 2.

Fatal cases.

Male, æt. 5 days. Admitted with large hæmatoma of scalp. Labour difficult; convulsions incessantly for 2 days before death. P.M.—Cephalhæmatoma over posterior part of right parietal bone; no fracture of skull; brain diffluent;

left hemisphere salmon coloured as if from effusion of blood; other organs normal.

Male, æt. 41. Five weeks before admission had pain on inner side of left thigh, and the day before a swelling suddenly occurred in that situation, accompanied with intense pain, from which he fainted. On examination a tense ill-defined swelling extends half way down the thigh from the flexure of the groin; some ecchymosis over it, and it is tender to deep pressure; arteries hard and tortuous; some bronchitis; history of syphilis (3 years before he was in hospital for multiple fracture of bones of face, and fracture of base of skull, and of the radius on each side; optic neuritis developed under observation; also left internal strabismus); internal strabismus of left eye still persistent from old injury, and there is also complete atrophy of the left optic disc. Patient died a fortnight after he entered the hospital, having during the whole time refused to take food; he suffered also from severe headache and considerable fever. There was some diminution of the size of the swelling in the thigh. P.M.—Well-marked tubercular peritonitis with adhesions; tubercles in the kidneys and in the upper part of the lungs; there was a united fracture of the middle fossa of the skull; evident signs of old meningitis at the base; optic nerves dull grey, and chiasma and tracts distinctly changed in colour; left third nerve greyer than the right and flattened; corpora quadrigemina normal; edges of fissure of Sylvius adherent, but on separating them numerous tubercles came into view; all the large arteries of the body were atheromatous. On incising the upper and inner part of the left thigh some dark blood was found extravasated, mostly subcutaneously; no sign of a ruptured vessel (see 'Lancet,' vol. i, 1886, p. 105, and also vol. i, 1887, p. 877).

DUCTLESS GLANDS.

Bronchocele.—Females 6. C. 5, R. 1.

Female, æt. 16, single, native of Hampshire. Eight months ago noticed a swelling in the right side of the neck. Two months later the left side was also affected. For 6 months there has been difficulty of breathing, especially after running or going upstairs. She had never seen anyone afflicted in the same way. The cottage in which she lives is close by a stream of water. The water she drinks is from a well which supplies the whole village. Operation strongly advised, but refused.

Female, æt. 33, single, native of Windsor. Left side of neck has been enlarged as long as she can remember, but during the last 12 months there has been a considerable increase in size and some dyspnœa occasionally; she thinks that some people in her neighbourhood have "big necks like herself." On admission general enlargement of thyroid, most markedly on right side. No cysts to be felt. *Operation.*—Division of isthmus, ligatured on each side with No. 4 silk. Recovery uninterrupted. Respiratory symptoms relieved. Left hospital 29 days after operation.

Female, æt. 27, single, native of Monmouth. Seven years ago noticed a lump on right side of neck; this has gradually enlarged. On admission enlarge-

ment of thyroid seems limited to the right side; never had any difficulty in breathing or swallowing. *Operation.*—Four-inch vertical incision on right side of median line. Tumour tapped, 6 oz. coffee-coloured fluid withdrawn; later, a second tapping gave 4 oz. of similar fluid; the tumour then easily shelled out, a silk ligature was placed around the isthmus, and then the diseased portion was cut away. Circumference of neck before operation 16 inches, after 11½ inches. Antiseptic precautions adopted; uninterrupted recovery.

Female, æt. 24, native of Lambeth, married. One and a half years ago before the birth of her first child, noticed a swelling in the front of neck; it did not trouble her till 4 months since, when it began to cause her pain, hoarseness of voice, difficulty of breathing and dysphagia. On admission oval-shaped tumour of thyroid isthmus size of duck's egg, lateral lobes apparently uninvolved. *Operation.*—Tumour dissected out and ligatured on either side with silk. Trachea compressed from before backwards, the lateral margins at the point where the tumour crossed the median line being sharp. The tumour was encapsuled, and much help was gained at the operation by an incision into it which enabled some of the soft thyroid tissue within to be turned out with the handle of a scalpel. On both right and left sides, thyroid tissue was left. Eighteen days after operation patient left the hospital cured.

Female, æt. 21, single, native of Bromley, Kent. Four years ago noticed a swelling in right side of neck after coughing. For 2 years the voice has been hoarse. On admission right lobe and isthmus enlarged. *Operation.*—Division of isthmus between silk ligatures; antiseptic precautions; discharged cured in 14 days.

Female, æt. 27, single, native of Vauxhall, but has lived in Essex, near Colchester. Noticed a swelling in front and on the right side of neck for 4 years; this has gradually increased, and for 6 months there has been much difficulty in breathing, especially at night. On admission isthmus of thyroid enlarged, size of hen's egg, right lobe slightly larger than normal; central tumour lying between upper margin of sternum and trachea, hence pressure upon the latter and dyspnoea. *Operation.*—Removal of right lobe and central tumour of isthmus, latter ligatured with silk. The tumour of isthmus was encapsuled, and contained a quantity of soft thyroid tissue. Antiseptic precautions; sharp rise of temperature for 3 or 4 days after operation, otherwise recovery unimpeded, and all signs of obstruction vanished.

(For 3 cases of spindle-celled sarcoma of thyroid see pp. 337 and 338.)

MISCELLANEA

(Including some cases of special interest and the remaining fatal cases).

Two cases of spinal caries—

Male, æt. 11. Pain in lumbar spine for many months followed by formation of abscess. *Treatment.*—Free lumbar incision. Finger found extensive carious excavation of the front of the bodies of several lumbar vertebræ. Rest in bed subsequently for 8 months, during which time angular curvature developed. Poroplastic jacket; iodoform dressing; healed in 9 months.

Male, æt. 29. Fluctuating swelling in left groin for 10 weeks. No history of

trauma. *Treatment.*—Small incision in groin and then a large counter-opening made in loin. No diseased bone felt. Quite healed in 2 months. Almost certainly spinal.

Both cases were shown at the Medical Society in perfect health December 19th 1887 (see 'Trans. Med. Soc.,' vol. xi; and 'Lancet,' Dec. 24th, 1887).

Eight fatal cases of spinal caries (see also one case under Malignant Disease of Rectum, which the P.M. showed to be spinal caries, and 1 case under Pyæmia, Special Table)—

Male, æt. 10. Pale, thin boy; has been ill for some months. Now a large swelling in left saphenous region; angular curve in dorsal region. No enlargement of liver, &c. Free lumbar incision; subsequently constant hectic temperature and emaciation; albuminuria, cough, and expectoration. Died in 6 weeks. No P.M.

Female, æt. 13. Pain, &c., for 12 months. Slight lumbar curve; double psoas abscess. One abscess opened 8 weeks before admission; profuse discharge; hectic and rapid loss of flesh. Death after 5 months in hospital. No P.M.

Female, æt. 3½. Right psoas abscess. Lumbar incision. Died of diphtheria (after tracheotomy) on the 143rd day. No P.M.

Female, æt. 20. Pain in lumbar spine for two years. Diagnosis: dorso-lumbar caries. Right psoas abscess. Aspiration. Continued high temperature, 104° F. Free incision. Profuse discharge; loss of strength and flesh; pain, vomiting, hectic; refused food; death on ninetieth day. P.M.—Body much emaciated. Two sinuses, one below Poupart's ligament and one in front of trochanter. Sheath of right psoas greatly distended with pus, showing that the drainage had not been efficient. Lumbar plexus dissected out by the pus. Ilium bare where abscess crossed it. Large pus cavity at upper part of thigh. Cartilage between third and fourth lumbar vertebræ had almost disappeared (except anterior rim). Adjacent surfaces of vertebræ slightly eroded. Heart small and flabby. Liver fatty. No amyloid change in any organs.

Female, æt. 56. Ill for 8 months. Two months ago a lump appeared below right groin. Suffers from bronchitis. *Treatment.*—Free lumbar incision under ether; no diseased bone felt. Temperature rose after operation to 103° F, with an attack of bronchitis, from which she did not recover. P.M.—Body thin. Right psoas abscess. The front of the bodies of last 3 lumbar and all the sacral vertebræ were carious. Heart, slight thickening of edges of mitral and tricuspid. Lungs, muco-pus in tubes. Spleen contained a small calcareous nodule. No tubercle anywhere unless splenic nodule indicated old tubercular disease.

Male, æt. 34. Pain in arms and shoulders 9 months ago. Four months ago pain in right side of neck and lump formed there. Six months ago lost power in lower limbs. On admission partial paraplegia and shooting pains in lower limbs. Tingling and numbness in fingers of both hands. Large abscess on right side of neck and behind pharynx. Cervical projection and tenderness, &c. Chin almost rests on sternum. Cough and phthisical expectoration. *Treatment.*—Antiseptic incision. Died 10 days afterwards. P.M.—Body thin. Large bed sore—bone exposed over sacrum. Left side of bodies of vertebræ from third cervical to third dorsal carious; posterior common ligament separated from bodies of vertebræ from third cervical to first dorsal by thick pus. Nerve-roots in cervical region compressed. No apparent compression of cord, but it was very soft. Lungs—at both

apices—evidence of tubercular change. No amyloid degeneration of any organ.

Male, æt. 29. Ten months ago severe pain in back and shooting pains in lower limbs. Right psoas abscess opened before admission. Drainage improved by lumbar incision. Same treatment subsequently for abscess on left side. Condition stationary for 4 months, when hectic and anorexia set in. Severe pain was complained of from first to last. Fourteen days before death fæcal matter began to be discharged through the sinuses. P.M.—Body very thin. Openings in each inguinal and each lumbar region. Double psoas abscess; that on right side communicating with the cæcum by an oval opening about $\frac{3}{8}$ inch in length. Some pus was found between rectum and sacrum. There was a small carious patch on the anterior surface of the eleventh dorsal vertebra; third lumbar carious on posterior surface. No thickening of dura mater and no affection of cord or nerves. Lungs: right upper lobe in a state of gray hepatisation. There was some old caseous material at the apex and also a little in the lower lobe, which was collapsed. Some yellow tubercular material at apex of left lobe. Liver fatty and amyloid. Kidneys amyloid; degeneration (slight) of medullary portion. Spleen lardaceous, as was also the tongue. Heart and other organs normal.

Female, æt. 26. Ten months before admission began to suffer from pain in the back, groin, and knee. When she came into ward the twelfth dorsal spine was very prominent, and there were 2 large swellings, 1 below groin on right side and 1 in left lumbar region. *Treatment.*—Aspirations followed by rise of temperature, and then free incisions in loin and thigh. Profuse discharge, emaciation, nausea, and death on the fiftieth day. P.M.—Extreme emaciation. Double psoas abscess. Caries of last dorsal and first lumbar. Large caseous nodules at apex of left lung. No amyloid change anywhere. Uterus contained a fœtus (about $4\frac{1}{2}$ months).

Osteo-plastic resection of the foot by the method of Mickulicz's.—Male, æt. 15. History of trauma 6 months before admission. Caries of os calcis and astragalus made out when he entered the ward. Mickulicz's resection performed. Cut surfaces of bone sutured with kangaroo tendon. Sensibility was completely regained. Operation quite successful. Limb $\frac{1}{2}$ inch longer than other. Patient can walk with facility as seen at the Medical Society, April 30th, 1888 (for account of operation see 'British Medical Journal,' May 5th, 1888, p. 955).

Sub-astragaloid amputation.—Female, æt. 35. Metatarsal caries and talipes. Has had trouble with foot for 15 years. Stump formed by amputation most successful. Seen 1 year afterwards. Could walk perfectly.

Extroversio-vesicæ, division of sacro-iliac joints, &c.—Male, æt. 5. An attempt to raise a Thiersch flap failed 3 years ago. Hence large cicatrix left, and much shifting of skin on that side on second admission impossible. Division of sacro-iliac synchondroses decided upon. Anterior iliac spines thus approximated 1 inch. This gain was maintained by continuous extension. Bladder was subsequently covered by a single lateral Thiersch flap; the exposed surface having been reduced in area from $3\frac{1}{4} \times 3\frac{1}{4}$ inches to $1\frac{1}{2} \times 1\frac{1}{2}$ inches by the closure of the symphyseal gap (see 'Med.-Chir. Transactions,' vol. lxx.)

Cicatricial contraction of elbow.—Female, æt. 23. Severely burnt when 3

years old about neck and elbow. Plastic operation last year for relief of eversion of lower lip. Broad cicatricial band on front and inner side of elbow (left), fixing latter at angle of 97° , and extending from above the middle of the arm to the wrist. Large flap (8×2 inches) raised from outer side of arm and forearm, the middle of it corresponding to external condyle. A fortnight later cicatricial bands completely divided and flap transplanted across front of elbow-joint. Some months afterwards movement at elbow very good, but complete extension was not possible; limit about 140° .

Treatment of club-foot by the removal of a wedge.

Female, æt. 6. Talipes varus (right). Had had various operations on the tendons performed. Davies-Colley's operation was quite successful. Foot in very good position when she left the hospital.

Female, æt. 10. Talipes varus (right). Numerous tenotomies had been done. The "removal of a wedge" made the foot at last assume practically the normal position. Both cases fixed at first with plaster of Paris. Boot and side support afterwards ordered.

Ununited fracture of patella.—Male, æt. 45. Five years ago fractured transversely left patella. On admission fragments separated $1\frac{1}{2}$ inches. Patient can walk well on level ground but has a difficulty in getting upstairs. *Operation.*—Spray and all antiseptic precautions. Broken portions of patella brought together with 2 silver wires. A few days later the temperature rose. The knee-joint suppurated; the pus burrowed in all directions. For some weeks it was doubtful whether he would recover. He at last, however, pulled round, and when he left the hospital the joint was ankylosed in almost a straight position, but the tibia was displaced a little backwards and slightly rotated outwards.

Two acute bone cases.

Male, æt. 17. Fell downstairs 4 days before he came to hospital. Since then great pain and effusion into knee. Three days after admission temp. 102.8° ; joint aspirated. No improvement. On the sixth day free incision and irrigation. Acute necrosis discovered outer side of lower end of femur; subsequently temperature remained high. Profuse suppuration; slight shivering. Condition generally worse, and $3\frac{1}{2}$ weeks after admission thigh was amputated. Rapid improvement. Stump healed in 3 weeks.

Male, æt. 9. No history of trauma. Pain in right ankle, with vomiting, shivering, &c., for 1 week before admission. On entering ward free incisions were made over shaft of tibia; ankle apparently not swollen. Periosteum of inner and outer surface of tibia extensively lifted from surface of bone by pus; 4 and 16 days later incisions respectively carried down to inner and outer malleoli, and 1 month after admission ankle was washed out; 3, 5, and 10 days after the irrigation of the ankle considerable amount of blood came through dressings. Child etherised; posterior tibial found ulcerated; it was ligatured above and below the opening and divided between. Health then gradually improved. Two formal sequestrotomies were performed at a later date, and the child left quite well in a plaster splint on the 198th day for a convalescent home.

Resection of the ulnar nerve.—Male, æt. 32. Fourteen months ago cut his arm 2 inches below elbow with broken glass. On examination loss of sensation

over distribution of ulna, atrophy of interossei and muscles of hypothenar eminence, &c. *Operation.*—Proximal end bulbous; both ends freshened, and then brought together with 5 fine green catgut stitches. Five weeks later sensation had returned almost completely in little finger. No change in muscular condition. Ordered galvanism, &c. Patient not seen since he left the hospital.

Fracture of humerus with injury to musculo-spiral nerve.—Male, æt. 34. Thirteen years before had broken his right humerus; 6 weeks afterwards it was refractured in a hospital because position was faulty. Since that time gradual loss of sensation and motion in region supplied by musculo-spiral, including some atrophy of deltoid and other shoulder-muscles. Condition much worse during last 9 months, and has had also considerable gnawing pain in arm and shoulder. Amputation of arm performed at junction of upper and middle thirds. Atrophied limb removed to museum.

Two cases which had previously been operated upon for neuralgia of the fifth nerve.

Male, æt. 50. Meckel's ganglion removed May, 1885 (see 'St. Thomas's Hospital Reports,' vol. xv, p. 217). Now admitted October, 1887, pain and tenderness of cicatrix during last 8 months. The cicatrix was excised, which relieved the patient at once.

Male, æt. 64. Inferior dental nerve stretched from inside mouth September, 1884 (see 'St. Thomas's Hospital Reports,' vol. xv, p. 208). Now admitted, January, 1887, with return of pain during last 9 months. *Treatment.*—Large doses of quinine. Much relieved.

Case of epilepsy following injury to the leg.—Male, æt. 35 (see account of previous operation in 'Clin. Soc. Trans.,' vol. xx). A fortnight ago had a severe fit; had not had one previously for 6 months; for last 2 weeks has had 4 or 5 fits a day. Sciatic nerve stretched again, a pull in each direction being maintained for 5 minutes; stretching force said to equal 30 lbs. Had a fit 3 weeks after operation; doubtful whether it was a real one; ? malingering.

Neuralgia (?) of kidney.—Male, æt. 38. "Twisted" his back 11 years ago whilst carrying a sack of corn. Ever since then much pain in the lumbar region, sometimes shooting down to testicle. Said to have passed blood and pus. On admission water clear; some oxalic crystals. No tumour. One point of considerable tenderness in left loin. *Operation.*—Removal of left kidney; no calculus; organ apparently normal. Before operation amount of urine passed averaged 40 oz., afterwards 10 to 50 oz. Temperature rose day after operation with slight shivering, pain in left side, perspiration, and some difficulty in breathing. There was also a systolic cardiac murmur. Symptoms continued, and patient grew weaker, and died on the eighth day after the operation. P.M.—No peritonitis. Above the site of the kidney, which had been removed, and continuous with the operation wound, the subperitoneal tissue was infiltrated with offensive pus. In places the abscess had a fairly defined wall, but it was for the most part diffuse, and no doubt of recent origin. Stump of ureter normal. Heart: aortic valves thickened and calcareous in places. Lungs: hypostatic congestion;

no recent pleurisy. Spleen large and soft. Bladder normal. No other abnormal signs.

Eczema of legs following phlebitis with effusion in left knee-joint.—Female, æt. 50. Four months before admission said to have had phlebitis of veins of both lower limbs. On examination eczema of legs and chronic œdema specially below left knee and swelling of left knee-joint. Temp. 101°, pulse 120. A few days later “boggy swelling” below left knee-joint was incised. Ten days afterwards she was transferred to No. 8 Block with erysipelas. The rash disappeared twice, only to return again. She suffered from rigors, diarrhœa, and phlebitis of right femoral vein, and died on the twenty-fourth day after her arrival in the Erysipelas Ward. P.M.—Incision on outer side of left knee communicated with joint cavity. Joint surfaces partly denuded of cartilage. Hypostatic pneumonia. “Cloudy swelling” of all organs. Large cyst in anterior vaginal wall (see museum).

N.B.—This case does not appear in the Pyæmia Table. It probably ought to do so. It was impossible to say, however, whether the “pyæmic state” commenced before or after she entered the hospital.

Acute traumatic gangrene.—Male, æt. 43, a gardener. Three days before admission a sharp rusty iron rod penetrated the leg for some distance. Blood spurting out and was arrested by placing cobwebs over the wound. Severe pain in limb shortly afterwards, and next day foot began to swell. On examination small punctured wound above middle of left leg and just external to crest of tibia. Limb swollen, œdematous, and emphysematous as high as middle of thigh. No pain. Purplish colour in places. Temp. 101·6°. Urine $\frac{1}{3}$ albumen. Pulse very rapid. Patient drowsy. Amputation of thigh ($\frac{1}{3}/\frac{2}{3}$) performed. Twelve hours later he began to vomit, his breathing became very rapid, and half an hour afterwards he died. Temp. 103°. P.M.—Heart flabby; endocardium much stained; blood fluid. Lungs congested in dependent parts. All the organs were in the condition (cloudy swelling) usually seen in septicæmia. Microscopically very long chains of cocci found in affected parts of limb.

Gangrene.

Male, æt. 58. Gangrene of toes and anterior part of foot after treatment for a corn. Diabetes. Much improved. Transferred to medical side.

Male, æt. 42. Gangrene of fifth toe, which afterwards spread to foot along outer side. Commenced after a corn was cut by a chiropodist 3 months before. Diabetes. Sent to an infirmary.

Female, æt. 49. Ill 4 weeks. Second, third, and fourth toes and anterior part of foot black and gangrenous. Albuminuria. Amputation of leg ($\frac{1}{3}/\frac{2}{3}$). Died 3 weeks later. For foot see museum. P.M.—Edges of flaps sloughing. Lungs œdematous. Heart: moderate hypertrophy of right ventricle. Liver fatty. Kidneys and spleen natural. Brain: some excess of subarachnoid fluid. Atheromatous patches in external iliac, femoral, and popliteal arteries. Right radial much thickened. Cerebral arteries, specially middle cerebrals, very atheromatous.

Male, æt. 66. Illness commenced 3 months ago. Suffered much pain. On examination 3 centre toes of left foot black, dry, and shrivelled. Gangrene extends on to the plantar and dorsal aspects of the foot for 2 or 3 inches. Urine normal. *Treatment.*—Amputation of thigh ($\frac{1}{2}/\frac{1}{2}$). No tourniquet used. Femoral

plugged with clot. Five small vessels tied (for foot see St. Thomas's Hospital Museum). A month later patient left hospital with the stump quite healed.

Male, æt. 42, and male, æt. 57. Both with gangrene of big toe. Both had diabetes and both sent to the infirmary. One had some symptoms of ataxy.

Male, æt. 52, gangrene of fourth right toe gradually coming for some months; spread from an ulcerated corn. Diabetes. Toe sloughed away. Much improvement with local treatment and strict diabetic diet. Partly healed when patient left hospital on the sixty-sixth day.

Avulsion of big toe-nail.—Male, æt. 65. Removal of nail was followed by formation of a foul ulcer, and necrosis of last phalanx; albuminuria. Removal of unguis phalanx by a dorsal incision, was in 2 days followed by infiltration of the foot, rise of temperature and delirium. Ten days later amputation below knee was done, but though the temperature remained normal the patient died 4 days afterwards. P.M.—Arteries everywhere very atheromatous. Heart: hypertrophy of left ventricle; atheroma of aortic and mitral valves, and of the aorta. Lungs very œdematous, old pleuritic adhesions. Kidneys normal size. Cortex diminished to about half the normal thickness, and paler than usual; a few cysts are visible. No other abnormal signs.

Arthritis metatarso-phalangeal joint of great toe.—Female, æt. 64. Injured toe 9 months before admission with a nail. *Treatment.*—Amputation of big toe; first phalanx necrosed. Much pus followed sheath of flexor longus pollicis tendon; counter-opening, antiseptics. Suppuration extended through foot. Ankle-joint unexpectedly involved. Amputation below knee performed. Patient died suddenly 4 hours afterwards. P.M.—Subcutaneous and perivisceral fat in excess. Heart: valves thickened generally; calcified patches in aorta. Liver: advanced cirrhosis, surface very irregular; section, yellow islands intersected by pale pink connective tissue; substance very hard. Kidneys: cortex rather narrower than usual. In connection with right kidney is a cyst the size of a Tangerine orange. Numerous adhesions in pelvis. Fibro-myoma of uterus with a very long pedicle; tumour size of hen's egg. Intestinal canal slightly congested; some hæmorrhages (patient had had diarrhœa). Brain: arteries atheromatous.

Three fatal cases of spina bifida.

Female, æt. 6 months. Sacral region size of large orange; ulcerated; injected with Morton's fluid. Died 5 days afterwards. P.M.—Sac empty; a little lymph found on left side. No other indication of commencing cure. One of the nerve-roots was adherent to the skin wall of the sac. The other fibres ran across the cavity, and some were adherent to the inner surface. The tumour only was examined.

Male, æt. 9 days. Lumbar region, size and shape of a bun; ulcerated in centre; paraplegia, &c.; convulsions; death. P.M.—The tumour only was examined. Skin covering tumour thickened; in the middle line below there is a depression; within the cord is adherent (see drawing in P.M. notes). Fluid quite clear; no lymph.

Male, æt. 1 day. Lumbar region; paraplegia; convulsions; death. P.M.—Tumour size of small orange in centre of lumbar region. Walls thin. Contains clear fluid. Tumour attached by a thick pedicle. On opening sac the walls

were found to be white, smooth, and glistening; and in them ran partly free, partly attached, large cords which appeared to be nerves. These all emanated from the base of the cyst, and a very small orifice there led to the spinal canal. The arches of the lumbar vertebræ were deficient as usual, but the child was so small that the exact state of things could not be made out. It appeared to be a meningocele and not a myelocoele. Extreme talipes varus of both feet existed. The rest of the body was not examined.

Double harelip and cleft palate.—Male, æt. 5 days. Admitted with diarrhœa and convulsions. Died in 5 days. P.M.—No abnormality of internal organs.

Three fatal cases of imperforate rectum.

Male, æt. 4 months. Colotomy 4 months before this admission. Now brought to hospital suffering from vomiting. Lived a few weeks, then suddenly abdomen became distended, breathing very rapid, temperature 105·6°, and in 36 hours death occurred. P.M.—Body much emaciated; colotomy wound healthy looking. External orifice of anus natural, but it led into a cul-de-sac. On opening abdomen lumbar colotomy orifice was seen to lead into sigmoid flexure. The bowel was firmly adherent, and there was no evidence of ulceration or perforation. The sigmoid flexure below was enormously distended. The rectum terminated $\frac{1}{2}$ inch from anus. Bladder natural. Acute peritonitis specially marked around sigmoid flexure. No perforation discovered. There was inflammation of the sigmoid flexure, which had commenced in the mucous membrane, and more or less involved the whole thickness of the bowel. No other diseased condition present.

Male, æt. 6 days. Perineal exploration failed; bladder was opened; Littré's colotomy subsequently performed. Died in 24 hours. P.M.—Body much emaciated. Sigmoid flexure had been opened; bowel below full of fæces. Rectum terminated blindly just above prostate. No organic disease discovered.

Female, æt. 2 days. On admission a puny infant with imperforate anus; fæces were, however, escaping by a small opening in the lower part of the posterior vaginal wall. An incision was carried backwards from this opening, and the rectum was easily brought down and stitched to the skin in the usual anal position. Patient went on well for a few days, but then developed erysipelas, and died on the thirteenth day. P.M.—Child emaciated. Large slough on sacrum; kidneys large; cortex swollen and studded with hæmorrhages, and also with minute round white dots, very numerous, and seen also in the medullary section. Aorta went to right of vertebral column. Foramen ovale open. Septum ventriculorum imperfect. There was only one large vessel coming off from the heart, and how the lungs were supplied with blood was not made out. Six toes on right foot, double harelip, and cleft palate.

Atresia narium.—Male 1. C. 1.

Male, æt. 25. Admitted with well-marked evidence of congenital syphilis in the eyes, ears, teeth and nose. There was complete occlusion of the nasal cavities about half an inch from the anterior nares. The base of each cul-de-sac was incised, and pieces of gum elastic catheter fixed *in situ* to ensure a free passage through the nostrils.

Abscess of liver and abdominal wall.—Male, æt. 5 months. Badly nourished

child. Three days before admission swelling noticed below and just to right of xiphoid cartilage. *Treatment.*—Aspiration followed by incision. Discharge scanty and offensive. Temperature varied, sometimes as high as 104.2° . Died of exhaustion on the sixteenth day. P.M.—Right lobe of liver adherent to base of abscess cavity. Exactly corresponding with the area of these adhesions, and extending directly from them, was a conical mass an inch deep, situated in the liver. It was yellow, not caseous but like pus, and yet not fluid. It suggested an early stage of actinomycosis. Not far off, but still quite separate, was an irregular suppurating area smaller than the conical one mentioned above, and containing pus which was more fluid. Nothing else abnormal was detected in the body.

Post-peritoneal abscess.—Female, *æt.* 64. Four months ago began to suffer pain in right side and had to give up work. Since then suffered from anorexia, loss of flesh and strength, and bronchitis. Three weeks ago right foot and leg began to swell, and there was much pain in limb. On examination some bronchitis. Right lumbar and iliac regions occupied by a tense hard mass, extending to mid-line and above umbilicus. Temperature normal. *Œdema* of the leg and foot. No enlarged glands. *Per vaginam*, abdominal tumour does not appear to have any pelvic connection. For several days after admission she vomited frequently, and passed a considerable quantity of pus *per rectum*. *Treatment.*—Aspiration, followed by incision; 160 oz. of pus evacuated. Patient died of exhaustion 2 months afterwards. She continued to be troubled with bronchitis, and shortly before death had 2 rigors. P.M.—Incision above iliac crest led into an abscess cavity extending from iliac fossa to diaphragm; it was entirely post-peritoneal, and it had no pelvic, kidney, or vertebral connection. Right kidney healthy, as was also the left. Wall of abscess thin. A small collection of pus (? pyæmic) was found on the right side of the vertebral column at junction of cervical and dorsal vertebræ. There was no bone disease. There was a slight lateral curvature in dorsal region, with convexity to the right. Lungs congested. Heart: valves thickened. Other organs healthy.

Apoplexy?, contusion of buttocks.—Female, *æt.* 72. On admission she was in a semi-comatose state, much bruising of buttocks. History of trauma imperfect. Lived 48 hours. P.M.—Extensive bruising of buttocks, especially right. No fracture. Pleuræ adherent. Intestinal coils blood stained. No peritonitis. Heart dilated and hypertrophied. Mitral valve incompetent. Aorta rigid and calcareous. Kidneys: some areas of local atrophy in cortex. Small intestine was lined with blood and mucus, and contained no fæces. Uterus, 3 interstitial fibroids, and in cavity a small polypus. Brain moderately injected, arteries tortuous and atheromatous, some with small aneurysmal bulgings.

Acute meningitis—

Male, *æt.* 36. Admitted by mistake into a surgical ward as a case of concussion. Transferred to a medical ward, where he died 2 weeks later (see Medical Notes).

Male, *æt.* 9. Five weeks ago fell on his head; was unconscious, and subsequently had vomiting and bleeding from left ear. Has been dull and complaining of headache ever since. In walking he had a tendency to go towards the left.

On admission, for last 24 hours has been very ill. Vomiting, convulsions, and severe headache. Now temp. 104° . Convulsive attacks constantly occurring. Much difficulty in administering food. He died in 48 hours. He had had one rigor. P.M.—Body thin. No fracture. Ears healthy. At base of brain recent lymph over pons, cerebellum, optic chiasma tracts and nerves, and in the fissures of Sylvius. No tubercles; no abscess. Ventricles contained an excess of turbid serum. All other parts of body free from disease except one large mediastinal gland infiltrated with yellow tubercle.

Apoplexy.—Female, *æ*t. 69. Was leaving hospital when she suddenly fell down the entrance steps. She died shortly afterwards. P.M.—Artery of right internal capsule ruptured into ventricles. Vessels at base of brain calcareous. Choroid plexuses cystic. Hypertrophy of heart. Disease of aortic and mitral valves. Aorta rigid, calcareous. Kidneys cystic; many of the cysts in one kidney contained calculi. No calculi elsewhere. Other organs normal.

Abscess of thigh. Diphtheria.—Male, *æ*t. 5. Admitted on surgical side and then transferred to Diphtheria Ward with temp. 105° , where he died (for P.M. see Medical Notes).

SUMMARY OF INJURIES.

GENERAL INJURIES.

Burns.—Males 22, females 33. C. 24, R. 1, D. 30.

Situation.—Face, arm, and trunk 8; forearms and hands 1; chest 1; face and hands 4; leg 1; trunk and thigh 3; face 5; foot 2; face and neck 1; neck, face, and arms 7; arm, trunk, and scrotum 1; face, arms, and legs 7; back 1; thighs and legs 1; arm and chest 2; buttock and thighs 2; feet 1; whole body 7.

Causes.—Paraffin lamp upset 12; burning pitch 1; matches 3; fell into fire or clothes ignited whilst standing by fire 25; gas explosion 5; sat down on hot flat-irons 1; paraffin lamp explosion 1; not stated 7.

Treatment.—Carron oil 45; Ung. Iodoformi 7; Lotio sodæ Chlor. 2; grafting 1.

Complications.—Erysipelas 1; diarrhœa 2; vomiting 1; convulsions 3; scarlet fever 1; bronchitis 1; pneumonia 1; chronic dementia 1; in 2 cases the ages were respectively 67 and 76; both recovered. Very high temperatures were noted in 4 cases, viz. 106·2°, 107·4°, 108·4°, 109°.

Fatal.—From collapse 18. Æt. 3 months; 12 months; 15 months; 2 years 2; 2½ years 2; 3 years 2; 4 years; 6 years 2; 10 years; 18 years; 32 years; 46 years; 54 years; 60 years. From exhaustion 11. Æt. 9 months 3; 2 years 2; 3 years 1; 3½ years 1; 5½ years 1; 26 years 1; 57 years 1; 75 years 1. From exhaustion and scarlet fever, æt. 10 months, 1 case.

Scalds.—Males 14, Females 18. C. 26, R. 4, D. 2.

Situation.—Head and shoulders 1; face and hands 1; face 1; chest 6; leg 4; both legs 2; chest and arms 2; face, neck, and arms 3; trunk 3; foot 1; arms 1; neck 1; face, chest, and hands 1; both buttocks 1; mouth 1; trunk and thighs 1; buttocks, thighs, and legs 1; both thighs 1.

Causes.—Boiling water 27; boiling tea 4; boiling soup 1.

Treatment.—Carron oil 22; Ung. Iodoformi 7; grafting 1; steam inhalation 1; Lot. Plumbi cum Glycerini 2.

Complications.—Delirium tremens 1; epilepsy 1; chicken-pox 1; scarlet fever 1; in 2 cases temperature reached 108°.

Fatal.—One from collapse and 1 from exhaustion.

No post-mortem examinations made on any burns or scalds.

LOCAL INJURIES.

Scalp Wounds.—Males 22, females 9. C. 28, R. 3.

Complications.—Bared bone 6; hæmorrhage 7; suppuration and burrowing of pus 4; epilepsy 1; pinna displaced 1; contusion of chest 1; 1 case developed facial paralysis on fourth day, ? cause; erysipelas 3; contusion of back 2; shock 1; contusion of hand and foot 1; contusion of foot 1.

Seven cases were said to have been unconscious before admission; no signs of concussion when these patients entered hospital.

Concussion.—Males 63, females 16. C. 73, R. 6. Four cases severe, 1 unconscious 4 days.

Complications.—Epilepsy 1; scalp wounds 20; bared bone 2; fractured scapula 1; persistent delirium 2; fracture of inferior maxilla 2; contusion of back 1; wound of lower lip 2; contusion of hand 1; persistent vertigo 2; contusion of chest 1; contusion of hip 4; drunk 2; contusion of elbows and thighs 1; bleeding from ear and membrana tympani torn across 4; contusion of foot 1; wounds of face 3; isolated rigor in 1 case, temp. 104.2° , no other rise of temperature; wound of forehead 1; imbecile 1; compound fracture of ulna 1; contusion of scalp 1; contusion of face 1; contusion of forehead 1; *non compos mentis* 1, æt. 84; bleeding from nose 5; transferred to Medical Ward as typhus 1; hæmatoma of back 1; hæmatoma of scalp 6; fractured ribs 2; 2 cases ? fractured base; Colles's fracture 1.

Slight optic neuritis appeared in 2 cases 1 week after admission.

No case of concussion this year followed by inflammatory symptoms.

Fractures of the Skull—Vault—

Simple.—Males 2. D. 2.

Male, æt. 4. Fell from first-floor window on to pavement, picked up insensible. On admission large scalp wound; unconscious; pupil contracted; breathing stertorous; vomited once; slight convulsive attacks; rigidity of limbs, died in a few hours. P.M.—No injury to limbs or trunk; 3 distinct fractures of the skull, from the region of the torcular herophili; 1 through left cerebellar fossa to foramen magnum, 1 forwards through occipital bone, and 1 on opposite side forwards through parietal as well as occipital; all 3 simple fractures; they did not absolutely meet posteriorly, but nearly did so; under surface of frontal lobes, and tips of temporo-sphenoidal lobes much contused.

Male, æt. 3. Some scaffolding fell on the child. On admission comatose, large hæmatoma of scalp, right facial paralysis, uttered occasionally a peculiar cry; lived three hours. P.M.—Separation of sagittal suture, separation of right half of coronal; fracture of right squamous, and left half of occipital. The fractures are like cracks, no displacement or depression; much blood under dura mater on right side, parietal region; no visceral disease.

Simple depressed.—Male 1. C. 1.

Male, æt. 8. Was struck on left side of head by a cricket ball (full pitch) from a distance of about 50 yards; said to have been unconscious for an hour, and then to have vomited. On admission quite sensible and complained of no

pain, on left side of head was a large pulsating hæmatoma, in squamo-parietal region; bony edges of irregularly rounded depression could be easily felt; diameter of depression 2 in. \times 1½ in.; no vomiting; no bleeding from ear or nose; pupils normal. *Treatment.*—Icebag.

Compound.—Males 4, females 1. C. 4. D. 1.

Male, æt. 54. Fell 12 feet from a ladder. On admission compound fracture of right half of frontal bone, Colles's fracture right; contusions of chest; no loss of consciousness, no vomiting, no blood from ears, nose, or mouth; pupils normal.

Treatment.—Antiseptics, healed by first intention.

Male, æt. 12. Whilst crossing road struck by shaft of cab, left frontal region. On admission compound fracture of skull in this region; no cerebral disturbance.

Treatment.—Antiseptics. On the ninth day a good deal of hæmorrhage occurred from the wound; chloroform given and small artery ligatured.

Male, æt. 11. Thrown out of trap; linea fracture left side frontal bone. On admission unconscious; pupils dilated; pulse 120; skin cold and clammy. Soon became conscious, but in the interval struggled violently and called out loudly.

Treatment.—Head shaved; antiseptics, icebag, calomel. Convalescence slow; retention of urine; fed with difficulty; wound suppurated; no rise of temperature; no optic neuritis.

Female, æt. 4. Fell off ladder short distance; compound fracture left parietal bone; conscious on admission; no cerebral signs. Antiseptics.

Male, æt. 14. *Fatal case.*—Head caught by buffer of express train. On admission extensive fracture of right parietal bone, &c., several loose pieces of bone, no depression; brain protruding; hæmorrhage from nose, ears, and mouth; comatose, much convulsed, apparently at last asphyxiated by the blood, lived 3½ hours. P.M.—Parietal, frontal and squamous bones extensively fractured, several loose fragments; orbital plate of frontal and petrous bone also fractured; dura mater lacerated in neighbourhood of wound and right hemisphere of brain much contused; some blood in lateral ventricle; no visceral disease.

Compound depressed.—Males 9, females 1. C. 7, D. 3.

Male, æt. 5½. Run over by a brougham. On admission compound fracture of right parietal bone; no cerebral signs. *Treatment.*—Antiseptics.

Male, æt. 15. Kicked by a horse. On admission large scalp wound; depressed fracture right parietal; in condition of "cerebral irritation," groaning, face pale, lips white; pupils equal, conjunctival reflex imperfect; pulse 70; all joints flexed, and patient resented any interference. *Operation.*—Several fragments removed; portion raised by elevator; dura mater not apparently injured; spray and all antiseptic precautions; pulse improved when bone was raised, but there was some twitching of facial muscles on opposite side. Several days patient very restless; grinds teeth and twists about; much difficulty in feeding him. Pulse slow. Conscious on fifth day, very apathetic; on sixth day some loss of power in opposite arm; on seventh slight twitching or convulsive movements of left upper and lower extremities, specially hand and forearm; also left side of face and angle of mouth; eyes turning to left, pupils dilated, but they act to light; dressing removed, scalp found to be œdematous; no further convulsive attacks, but for several days grasp of left hand much weaker than that of right; went out on fortieth day quite well, and with a metal protector for the opening in the skull.

Male, æt. 77. Bullet fracture, right temple. On admission quite conscious; small wound above and in front of right ear; no cerebral disturbance; slight headache. *Operation.*—Scalp reflected, circular bullet-hole in skull $\frac{3}{4}$ inch in diameter; the circle of bone was depressed, and in the depression the flattened bullet was found; trephine was then applied in order to gain a vantage position for raising the depressed bone, and middle meningeal artery ligatured. Full antiseptic precautions. Catheter passed during convalescence in consequence of enlarged prostate. Complete recovery.

Male, æt. 57. Kicked by a horse. Compound depressed fracture of right side of frontal bone; outer table depressed in region of frontal sinuses; small fragments of bone removed; no cerebral signs. Antiseptics.

Male, æt. 23. Fell 40 feet from a scaffold. During fall struck head against a projecting pole. When picked up was unconscious and bleeding from nose and mouth. On admission breathing stertorous, face pale, very restless, groaning a great deal, took no notice of questions, no vomiting or involuntary evacuations. Pupils unequal and inactive to light and accommodation. Small, lacerated, scalp wound; compound depressed fracture right side frontal bone. *Operation.*—Trephining. Bone raised and loose pieces removed. Antiseptic precautions. After operation very restless; temp. $100\cdot4^{\circ}$; retention, and was very difficult to manage for several days. Wound suppurated; memory very defective until just before discharge. Left hospital on forty-second day. No optic neuritis followed the injury.

Female, æt. $1\frac{1}{2}$. Fall 20 feet down a well staircase; picked up unconscious. On admission unconscious; temp. 96° , pulse slow; pupils unequal; small scalp wound over right side of frontal bone, depressed fracture in same situation; brain-substance in wound; vomiting; constantly making a low whining noise. *Operation.*—Enlargement of wound, trephining, elevation of depressed bone, &c.; antiseptics. Convalescence unimpeded; some tendency to hernia cerebri obviated by tight bandaging. Left hospital with metal plate over opening in skull on the sixty-seventh day.

Male, æt. 11. Bullet fracture of skull, wound in scalp 2 inches above and $1\frac{1}{2}$ inches in front of left external auditory meatus; face pallid; right pupil larger than left; patient more or less unconscious, can be roused by shouting at him. On manipulation of wound patient cried out and moved limbs of opposite side. Injury caused apparently by revolver bullet during play. Double optic neuritis developed in 48 hours, and later became very intense. Three days after admission patient trephined, bone raised, and fragments removed; small opening in dura mater; pus oozed from under dura mater; antiseptic irrigation. There had been some rigidity and flexion of right hand, arm, and leg before operation, which continued for some time after. More intelligent after operation, but still very restless, and has frequent screaming fits. Shortly hernia cerebri developed and became considerable in size; it gradually subsided, and the wound healed, optic neuritis disappeared, and he went to a convalescent home. Later in the year he was again admitted. He had a few convulsions, the march of the symptoms being in this order: depression of lower jaw; retraction of right angle of mouth; tonic spasm of arm and leg (right). *Ophthalmoscopic examination.*—Veins tortuous near discs, which were not pale; some streakiness at edges. On discharge very dull; avoids sunlight; staggers occasionally in walking, right leg

weaker than left. Patient returned later with recurrence of hernia cerebri; he died at beginning of January, 1888. P.M.—Bullet encapsuled in right frontal lobe; large suppurating cavity in left hemisphere.

Fatal cases.

Male, æt. 25. Thrown out of cart. On admission unconscious; skin cold and clammy; pupils equal, acting to light; lacerated scalp wound; compound depressed fracture; posterior superior part of left parietal; antiseptic dressing. Patient's condition became worse; pulse 140, full; very restless; convulsions, right upper extremity; rigidity of left leg; temp. 103°. Three days after admission trephining performed; whole scalp œdematous; much blood removed from under dura mater; he died a few hours later; temp. 108.4°. P.M.—Large starred fracture involving posterior superior part of left parietal; brain contused beneath, and showed signs in various places of numerous hæmorrhages; bruising of orbital surface of right frontal and tip of right temporo-sphenoidal lobes. On removing brain fracture was seen to extend across posterior fossa nearly to foramen magnum. Left lateral sinus slightly lacerated. No injury or disease in other parts.

Male, æt. 65. Bullet fracture. On admission lacerated wound and compound comminuted depressed fracture right temporal region, very extensive; comatose, extremities cold; pulse fluttering; pupils very small, right slightly larger than left, not acting to light or accommodation; vomited once, nothing but blood; involuntary evacuations; died shortly after he entered the ward. P.M.—Viscera healthy; coronary arteries slightly atheromatous. Vault of skull very much damaged, and right hemisphere of brain greatly lacerated; the shattering of the skull was so great that it was reserved for a museum specimen.

Male, æt. 2. Knocked down by a horse. Small scalp wound, compound depressed fracture of right side of occipital bone, brain protruding. *Operation.*—Trephining, elevation of depressed bone, &c. Patient much better after operation, had previously been unconscious; pupils contracted and unequal; mouth drawn to right side, eyes directed to left; some rigidity of right hand and arm. Suppuration, however, occurred, and hernia cerebri. On sixth day more bone was removed? to relieve tension; slight optic neuritis; died 2 days later; temp. 106.6°. P.M.—Basal and spinal meningitis.

Fractures of the skull. Base.—Males 6, females 2. C. 3, R. 3, D. 2.

Male, æt. 24. Pitched out of cart on to his head. On admission comatose; pupils contracted, bleeding from ears; pulse rapid and feeble; temp. 96°. *Treatment.*—Head shaved, icebag. Unconscious for 2 days, and afterwards very irritable and difficult to manage. Temperature on second and third day 102.8°. On fourth day double optic neuritis, which rapidly cleared up. Not quite *compositis* on discharge.

Male, æt. 32. Fell 10 feet off a ladder, unconscious for 20 minutes, and then brought to hospital. On third day severe occipital headache; ecchymosis over right mastoid region and some swelling over posterior inferior angle on right parietal; pupils normal; eyes can scarcely be opened; deafness both sides; double optic neuritis; restless; occasional vomiting; temp. 101.8°. *Treatment.*—Icebag and calomel. Discharged cured on the twenty-second day.

Male, æt. 24. Thrown from a trap on to face. On admission unconscious; restless; bleeding from nose; subconjunctival hæmorrhage on both sides; blood continued to come from nose for 4 days; no optic neuritis detected; memory and complete consciousness regained on fifth day; highest temperature 99·6°. *Treatment.*—Icebag, calomel, &c. There was also a fracture of the inferior maxilla, which was dealt with in the usual manner.

Male, æt. 22. Fell 40 feet from a scaffold; struck something in his descent. On admission semi-conscious condition; small scalp wound over occiput; bleeding from nose and ears; contusion of left hip. Four days later much headache, temp. 101°, and haze of both optic discs. Discharged cured on twenty-first day.

Male, æt. 33. Fell 40 feet from a scaffold. On admission confused in speech; complained of pain in chest; bleeding from nose (left side); subconjunctival hæmorrhage left side; vomited 3 times. Temperature rose on third day to 100°. Some headache; no optic neuritis. Discharged well on the twelfth day.

Female, æt. 23. Fell out of window into an area. On admission unconscious; large hæmatoma left parietal region; bleeding from ears and nose; pupils unequal. *Treatment.*—Head shaved, icebag, &c. Regained consciousness on seventh day; some headache; temp. 99°; no optic neuritis. When she left hospital speech was slow, intellect not clear, some weakness of left arm.

Fatal cases.

Male, æt. 56. Fall of 20 feet from a balcony. On admission comatose, bleeding from mouth and nose; pupils contracted and equal, insensible to light or accommodation; compound depressed fracture left parietal bone; lived 2 hours; before death head shaved ready for operation. P.M.—Portion of bone 1 in. \times $\frac{3}{4}$ in. driven into brain at front of left parietal bone; fracture extended into frontal bone, and also downwards and backwards across temporal fossa, left petrous bone, and left occipital fossa, ending finally in the foramen magnum. Also fracture through right occipital fossa. Much blood effused base of brain. Aorta atheromatous; no other indications of disease.

Female, æt. 55. Knocked down and run over by a hansom; wound over eyebrow; unconscious, cold and pulseless; bleeding from nose and mouth; no bleeding from ear; died 15 minutes after admission. P.M.—Fracture of nasal bones; subconjunctival hæmorrhage on left side; both pleural cavities contained half a pint of blood; fifth and sixth left ribs fractured; jagged and sharp end of sixth rib projecting through parietal pleura; third, fourth, fifth, and sixth ribs on right side fractured near angles, and all four perforated parietal pleura; some extravasation of blood deeply in neck; no fracture of spine; fracture of sphenoid clinoid processes; no blood within cranium.

Extra case not admitted to wards; died in surgery; no clinical notes. Male, æt. 5. P.M.—No scalp wound. Extensive fracture of vault and base; on right side an area of bone 3 in. in diameter composed of squamous and parietal bones was partially detached; the fracture passed through the middle fossa on both sides, behind sella turcica, completely separating the anterior from the posterior portion of the skull; no hæmorrhage either external or internal to dura mater; brain uninjured; sinuses not ruptured; numerous small recent hæmorrhages on surface of lungs; no other signs of injury or disease.

Self-inflicted wounds of neck.—Males 8, females, 5. C. 8, R. 2, D. 3.

Fatal cases.

Male, æt. 50. Wound with table knife. On admission unconscious, cold, temp. 96°. Second wound 3 inches long over region of heart. Tracheotomy tube placed in trachea through neck wound; died 4 hours after admission. P.M.—Transverse neck wound 5 inches long, 3 inches on left, and 2 inches on right. Trachea divided below cricoid, and larynx through lower part of thyroid cartilage. Main vessels uninjured; pharynx not opened. No disease of organs. Death from hæmorrhage before admission.

Female, æt. 69. Wound inflicted with a razor, 3 inches long, transverse; thyroid cartilage divided just above vocal cords, main vessels escaped, but there was much loss of blood before admission. Thyroid cartilage sutured with silver wire; antiseptic dressing; subsequently much difficulty in swallowing; gradually got weaker, and died on fourth day. P.M.—Chronic bronchitis and emphysema; ventricles atrophied; auricles dilated; contracted granular kidneys. Besides injuries above described, the base of epiglottis had been divided.

Female, æt. 50. Died shortly after admission. Great loss of blood. Ligature of internal jugular vein and some branches of external carotid. P.M.—Four-inch incision, transverse, left side of neck, reached to middle line at centre of thyroid cartilage; sterno-mastoid, sterno-hyoid, and sterno-thyroid divided; internal jugular vein divided, upper end ligatured, not lower; carotid, vagus, and descendens noni uninjured; left alar of thyroid cartilage notched superficially in three places. Atheroma of aorta and cerebral arteries. No other sign of injury or disease.

Contusion of chest.—Males 3. C. 2, D. 1. Two (?) fractured ribs. One cured had pneumonia.

Fatal case.—Male, æt. 3½. Run over. Hind wheel of laden coal van passed over chest. On admission blanched restless, pulseless; frequent cries of pain; large bruise over right side of chest, smaller one over left side. *Diagnosis.*—Ribs not fractured; pupils dilated, equal; eyeballs turned upwards; no dyspnoea; vomited once, no blood; died in 20 minutes. P.M.—Peritoneum contained a pint of pure blood, blood came from rupture of liver, upper surface near lobulus Spigelii; right kidney nearly separated into two parts; some extravasation into perinephritic connective tissue. Heart: extravasation in wall of left auricle. Fracture of fourth, fifth, sixth, and seventh left ribs. Lungs uninjured.

N.B.—This case should be really under another heading, but it is the custom to arrange the cases by the *diagnosis* made, not by the real state as revealed at the P.M.

Fractured ribs.—Males 20, females 3. C. 22, D. 1. *Complications.*—Emphysema of chest wall 6; hæmoptysis, slight 4, severe 2; hæmaturia 1; bronchitis 6; scalp wound 1; retention 1; contusion of lumbar region 1, of arm 1, of abdomen 3; concussion of brain, 1; pneumonia 2; pleurisy, pneumo- and hæmatothorax 1.

Fatal case.—Male, æt. 47. On admission drunk; had been thrown from his cart against a wall; fifth, sixth, and seventh right ribs fractured. Next day much difficulty in breathing; temp. 100·8°, pulse 140. Right base dull, tubular

breathing and crepitations, rhonchi over both lungs; soon became delirious and died on fifth day. P.M.—Right pleural cavity full of fluid and coagulated blood; lung collapsed and airless; fractured ends of fifth, sixth, and seventh right ribs had perforated the parietal pleura. Left lung œdematous and congested. Liver fatty. No other gross disease or injury detected.

Fractured sternum.—Male 1. C. 1. Male, æt. 44. Caused by a fall when drunk; at junction of manubrium and gladiolus; no evident displacement; severe pain and local tenderness; left hospital strapped and bandaged on seventh day.

Fractured spine.—Male 1, female 1. C. 1, D. 1. Female, æt. 17. Fell to ground whilst cleaning window on third storey. On admission fracture of lower dorsal spine diagnosed; great tenderness, swelling, and pain in injured region; great pain on movement; left astragalus fractured, some displacement of foot. *Treatment.*—Plaster-of-Paris jacket put on under ether; water-bed; foot fixed in plaster of Paris. Great relief from splint. Convalescence rapid, interrupted by an attack of tonsillitis for a day or two, in which temperature reached 106°. Left in a poro-plastic jacket on the seventieth day.

Fatal case.—Male, æt. 40. Was struck in the back by the buffer of a passing train; picked up insensible and brought to hospital. On admission conscious but collapsed; large hæmatoma over lower dorsal region; much local pain; lower extremities paralysed; motions passed into bed; urine retained, contained blood. Pulse feeble and rapid. Respiration hurried and shallow. Anæsthesia as well as paraplegia of lower extremities; reflexes absent. Plaster jacket applied; died shortly afterwards. P.M.—Eleventh dorsal vertebra showed a transverse fracture through the body; dura mater and spinal cord lacerated; eighth and eleventh left ribs fractured, as was also the eleventh right. Small linear laceration of front surface of left kidney. Much blood extravasated into connective tissue behind peritoneum and pleuræ. No evidence of organic disease.

Concussion of spine.—Males 7, female 1. C. 5, R. 3. *Complications.*—Contusion of back 4; of buttocks 1; vertigo 1; retention 3; hæmaturia 1; fractured ribs 1; hæmatoma over sacrum 1; paraplegia and anæsthesia of lower limbs 1 (lasted 4 days).

Dislocation of spine.—Males 1. D. 1.

Fatal case.—Male, æt. 47. Fell out of cart backwards, alighting on his shoulders. On admission loss of power and complete anæsthesia below nipple line; no ankle-clonus; very slight patella-reflex; no cutaneous reflexes obtainable below nipple line except the plantar; retention of urine; sharp burning pains from elbows to wrists; diaphragm not paralysed; quite conscious; pupils contracted, acting very slightly to light and accommodation; some prominence opposite junction of cervical and dorsal spine. Dislocation diagnosed. Patient placed under ether, and reduction attempted. Gradually sank and died on eighth day. P.M.—Spinous process of seventh cervical freely movable; fracture through left lamina and right pedicle; dura mater intact; spinal cord softened opposite fracture, normal above and below; heart dilated and flabby; aortic valves incompetent and calcareous; aorta dilated and atheromatous; contracted granular kidneys.

Contusion and concussion of abdomen.—Males 19, females 4. C. 21, R. 2. *Complications.*—Vomiting 5, 1 vomit streaked with blood; retention 6; general

peritonitis 1; local peritonitis 1; dyspnœa 4; shock (severe) 8; contusion of leg 1, of chest 1, of thigh 1; hæmaturia 1; scalp wound 1; wound of forehead 1; bronchitis 1; syphilis 1.

Contusion of stomach.—Male 1. C. 1. Male, æt. 16. Body crushed between 2 vans. Complained of great tenderness in epigastric region. Shortly after admission vomited; vomit consisted of partly digested material mixed with blood. Pulse fluttering; extremities cold, great pallor of surface; urine clear. Gradually improved, and left hospital on tenth day.

Ruptured spleen.—Male 1. D. 1. (See also 1 case under fractured pelvis.)

Fatal case.—Male, æt. 25. Patient brought to hospital 11 a.m. with a history of having been run over by a hansom cab the previous night; hansom had 3 persons inside. Wheel passed over middle of trunk. Left in stable all night without attention. On admission could just stand; complained of severe pain in breathing; respiration shallow andapid. Surface of body cold; lips blue. Pulse thready, difficult to count. Cr itus of broken rib could be felt lower part of left side. Extreme tenderness on examination. Abdomen distended, dulness in each flank, most extensive in left. Urine passed naturally; no hæmaturia. *Exploratory operation.*—Four-inch incision; much blood in abdominal cavity. Spleen discovered lacerated on inner surface. Incision extended upwards. Spleen excised. Pedicle secured with silk. Irrigation with boracic solution; spray, antiseptics, &c. The operation was done about 12 hours after the accident, and the patient survived the operation 2½ hours. P.M.—Abdominal incision 9 inches. No peritonitis. No blood in abdominal cavity. Some blood effused in perinephritic tissue on left side, and also in subperitoneal tissue in splenic region. Eighth rib (left) fractured just external to its angle. Pleura not lacerated. All organs pale but otherwise natural.

Ruptured spleen and kidney.—Male 1. D. 1.

Fatal case.—Male, æt. 57. Whilst crossing the road was struck by the shaft of a cart in the left hypochondriac region. He was knocked down, but not rendered insensible. On admission 7.30 p.m. left eighth rib in axillary line thought to be fractured. Much pain and considerable collapse. One hour later pulse 130 and feeble; pallor of surface; lips white; griping pains in abdomen, which was now tender to manipulation, and the flanks were dull, the dulness shifting with the position of the patient; no sickness; no hæmaturia. During the night condition slightly improved; lips not so pallid next morning, pulse better, but during the day abdomen became distended and more tender. Pulse 120, small and hard; respirations 35. At midnight abdominal exploration determined upon (30 hours after the accident). When the peritoneum was opened about a pint of blood escaped and a great quantity of clot was removed. Irrigation with warm boracic solution carried out until fluid returned clear. Glass drainage-tube inserted. Spray, antiseptics. Subsequently a large amount of sanguineous discharge came through the tube. Patient gradually sank and died 30 hours after operation. P.M.—Eighth and ninth left ribs fractured. The ninth had perforated the pleura and slightly injured the diaphragm. Lung uninjured. Recent lymph around small intestines and other evidences of peritonitis. Spleen concealed by dark clot; several lacerations on convex surface. There were also two lacera-

tions on posterior surface of left kidney, and much extravasation of blood in connective tissue around spleen and kidney. No sign of disease or injury elsewhere.

Extra case.—Ruptured liver.—Not admitted to wards. No clinical notes. Died in surgery. Male, æt. 54. P.M.—Abdomen contained 3 pints of dark liquid blood. Right lobe of liver ruptured transversely for about 3 inches midway between anterior and posterior border. The rupture extended from the superior to the inferior surface, and one large vein was lacerated; several exposed. The right sixth, seventh, eighth, ninth and tenth ribs were fractured external to their angles. The pleura was lacerated by the ninth and tenth. Left ventricle hypertrophied. Lungs emphysematous. Kidneys showed several small patches of local atrophy. Atheroma of aorta and cerebral arteries (see also 1 case of ruptured liver under Contusion of Chest).

Ruptured intestine.—Male 1. D. 1.

Fatal case.—Male, æt. 34, labourer. Seventeen hours before admission received an injury to abdomen. He stated he had been jumped upon. No medical advice before reaching hospital; great pain, and vomited several times. Walked up to hospital. Abdomen tense and tender. Temp. 103°. No dulness in flanks; some in hypogastric region; urine clear. Pulse wiry, 110. Breathing rapid; thoracic. Countenance anxious; flushed. Median laparotomy performed at once. Ilium ruptured transversely in two thirds of its circumference at junction of lower and middle thirds. Mesentery in same neighbourhood torn through for 1½ inches. There was also a considerable rent in the great omentum just above umbilicus. Fæcal extravasation; septic peritonitis. Irrigation of cavity with warm boracic. Enterorrhaphy debated, but postponed in favour of artificial anus. Edges of ruptured bowel attached to parietal wound. Operation lasted 1½ hours. Much exhausted afterwards, but recovered satisfactorily. No symptoms of peritonitis after operation, but patient had rather a sharp attack of bronchitis. This yielded to treatment, but he did not gain either flesh or strength, owing partly to the irrepressible escape of intestinal contents at the artificial anus, and partly to the local irritation established in the abdominal wall by the contact of the intestinal secretion. Four weeks after the first operation the artificial anus was closed. The patient was prepared for the operation by substituting rectal feeding for alimentation by the mouth and by local irrigation of the intestine. The bowel was then separated from its parietal attachments, the injured portion resected, and the cut surfaces carefully united by the sutures of fine silk; 20 of these were in one row, after Lembert's manner of suturing. Operation lasted 2½ hours. Death took place 13 hours afterwards. P.M.—Abdominal wall separated from omentum and intestines with much difficulty, as there were numerous strong adhesions. Resection of ilium 8 feet from ileo-cæcal valve. No recent peritonitis. On distension of the sutured intestine with water it was found to be soundly closed and water-tight. Both lungs congested and airless, or nearly so. Right lung adherent all over. Other organs healthy. For the specimen of sutured ilium see St. Thomas's Hospital Museum (see also 'Clin. Soc. Trans.,' vol. xxi).

INJURIES TO PELVIS.

Contusion of perineum.—Male 1. C. 1. Scrotum and perineum much contused and swollen after a high jump, feet foremost, into a swimming bath.

Wound of scrotum.—Male 1. R. 1. Wound caused by a fall against the edge of a fender.

Ruptured urethra.—Males 2. C. 2. Both caused by a fall in which a severe blow was inflicted on the perineum. *Treatment.*—Catheter tied in.

Fractured pelvis.—Males 4, females 3. C. 4, D. 3.

Cases that recovered—

Female, æt. 2½. Horizontal ramus of pubes. Run over. Hæmatoma of buttock.

Male, æt. 15. Fall of 17 feet. Much crepitus; urine clear.

Male, æt. 2½. Run over. Urine clear. Whooping-cough. Much contusion of left groin.

Male, æt. 33. Left anterior superior spine broken off.

Fatal cases.

Male, æt. 13. (See Special Table III.—Pyæmia.)

Male, æt. 3¾. Run over. Fractured pelvis, great contusion of abdomen and thighs. Died shortly after admission. P.M.—A healthy-looking child; contused about inguinal regions. On opening abdomen pelvis was found full of blood. The bladder had been torn completely from its anterior attachments to pubes, and had been drawn down by a displaced fragment of bone. The pelvis was fractured in many places on both sides. Other parts natural.

Female, æt. 3. Run over. Died 2 hours after entering hospital. P.M.—Body well nourished. Bruising of abdomen and left thigh. Small laceration on anterior border of spleen. Some subperitoneal extravasation of blood. Both sacro-iliac synchondroses separated. Fracture of left horizontal ramus of pubis and left ascending ramus of ischium; spine of ischium detached. All other parts healthy.

INJURIES OF THE UPPER EXTREMITIES.

Wounds—

Arm.—Males 2. C. 2.

Male, æt. 15. *Complications.*—Contusion of leg; hæmatoma of forehead. Wound lacerated; superficial.

Male, æt. 50. Run over. *Complication.*—Concussion. Wound punctured, (1½ inches). Some venous hæmorrhage.

Forearm.—Males 6, females 5. C. 5, R. 6. *Complications.*—Ulnar artery divided in 3, radial in 4; flexor tendons in 6; radial nerve in 2; ulnar nerve in 3, and median in 1; lacerated wounds into muscles of upper part of forearm in 2; hæmorrhage almost fatal before admission 1; cellulitis 1; profuse suppuration 1; traumatic aneurysm of radial 1. *Treatment.*—All arteries ligated and tendons and nerves sutured. Antiseptics. Continuous irrigation adopted in one case.

Patients left, some with, but most before, wounds healed. No ultimate record to hand.

Hand.—Males 14, females 4. C. 13, R. 5. *Complications.*—Division of extensor indicis 1; of extensor primi and secundi internodii pollicis 1; of flexor tendons 6; of median nerve 1; of radial artery 1; soft parts torn off dorsum 1; lymphangitis 1; suppuration in several cases. *Treatment.*—Arteries ligated, nerves and tendons sutured. Continuous irrigation 1; radial arteries ligated in 2 cases at wrist: (a) for secondary hæmorrhage, (b) in consequence of great swelling of palm from blood extravasation. In 2 cases amputation of 2 fingers: (a) index and little, (b) index and middle, laceration extensive, much damage to hands. No record of final condition to hand in any case.

Avulsion of forearm.—Male 1. C. 1. Arm caught in machinery; hand and forearm torn off. *Treatment.*—Amputation of arm. Recovery.

Dislocations—

Of shoulder.—Males 2, females 3. C. 5. Two right, 2 left, 1 not stated. Direct violence 1, indirect 4. All subcoracoid. Two admitted same day as injury; one 5 weeks, one 3 weeks, and one 13 weeks after dislocation occurred. All reduced by manipulation. One also had a fracture of the humerus.

Of elbow.—Radius and ulnar backwards. Male 1, female 1. C. 2. Right 1, left 1. Indirect violence 1, direct 1. *Complications.*—One with fracture of external condyle; 1 with fracture, but situation doubtful. Both reduced under ether.

Of thumb.—Compound (proximal phalanx). F. 1, R. 1. *Complication.*—Thecal abscess.

Fractures—

Of Clavicle.—Males 2. C. 2. Right 1, left 1. Both indirect violence. Both simple and not comminuted. Admitted as in-patients as they had been unconscious.

Of Scapula.—Males 3. C. 3. Left 3. All direct violence. In 2 cases the fracture was transverse just below the spine. In 1 the spine was apparently broken across. *Treatment.*—A plaster cap in each case.

Of humerus.—Males 2, females 2. C. 3, R. 1. All left. Direct violence 2, indirect 2. 1 transverse lower third; 1 involving elbow and with wound of thigh; 1 oblique upper third and with contusion of thigh; 1 surgical neck and much displacement of upper end of lower fragment inwards.

Comminuted.—Female 1. C. 1. Right. Direct violence. Æt. 75. Upper extremity.

Compound.—Males 5. C. 4, R. 1. Right 4; not stated 1; direct violence 3, indirect 1; not stated 1. Three lower third, 1 upper third, 1 involving elbow. Four recent, one 3 months previously. In 2 cases necrosed bone was removed after union was complete. *Complications.*—One phthisis; 1 old disease of humerus. *Treatment.*—Antiseptics; dish splint; plaster. Sequestrotomy.

Compound comminuted.—Males 2. C. 2. Right 1, left 1. Both direct violence. Both involving elbow. One T-shaped fracture; 1 much comminuted, and several fragments of bone were removed.

Of radius and ulna.—Males 2. C. 2. Left 1, not stated 1. Direct violence 1, not stated 1. *Complications.*—One scalp wound; 1 superficial wound over fracture.

Compound.—Males 2, female 1. C. 3. Right 3. One direct violence, 2 indirect. Two with very small wounds; 1 with ulna protruding, and 6 weeks later sequestrotomy had to be performed.

Of hand.—*Compound.*—Male 1. C. 1. Proximal phalanges of second and third fingers, and several lacerated wounds.

Compound and comminuted.—Male 3, female 1. C. 4. All cases of crushed hands. One, thumb and little finger saved; 2 amputation of ring and little fingers; 1 amputation of ring and middle fingers, and complicated by wound of forehead, fracture of ribs, and emphysema of chest wall.

INJURIES OF THE LOWER EXTREMITIES.

Wounds—

Of thigh.—Males 5. C. 5. One lacerated; 1 punctured; 1 incised; 2 punctured and lacerated. *Treatment.*—Antiseptics. All cured.

Over knee.—Males 2, females 1. C. 3. All superficial wounds; 2 on inner, 1 on outer side of joint. One with ? history of escape of synovia.

Of leg.—Males 9. C. 8, R. 1. *Five lacerated*; 1 complicated with hæmatoma of popliteal space; 1 with considerable hæmorrhage before admission; 1 sent out because refused to be “grafted;” 1 very extensive laceration by train-wheel (bones uninjured), *treatment*, strapping with portions of sheet lead and grafting; 1 had an attack of erysipelas. *One incised*; 1 *contused*; latter caused by horsekick and followed by cellulitis. *One punctured* with a butcher’s knife. Division of posterior tibial artery and nerve and peroneal artery, *treatment*, ligation of the arteries; suture of the nerve; antiseptics. Sensation normal, muscular movements almost normal on discharge 60 days later. *One bullet wound*; exploratory operation; bullet not found; free suppuration; recovery.

Of foot.—Male 1, female 1. C. 2. Both caused by stepping on glass. One lost much blood on way to hospital; ? divided termination of posterior tibial.

Contusions.—Males 17, females 7. C. 22, R. 1, D. 1. Of hip 7; of thigh 2; of knee 1; of leg 3; of foot 11.

Fatal case.—Female, æt. 71. Slipped down on pavement. Admitted with bruising about hip. No bone injury. Much excited by examination in ward, died suddenly shortly afterwards of syncope. No P.M.

Dislocations—

Of hip.—Females 3. C. 3. Two dorsal; 1 sciatic; 1 direct violence (fall on hip); 2 indirect. Æt. 25, 5, and 3½. All recent, and all easily reduced by manipulation.

Of little toe.—Compound, Male 1. C. 1. Wheel accident. Also injuries to second and third toe; reduction; antiseptics.

Fractures of the femur—

Shaft, simple.—Males 51, females 18. C. 66, R. 1, D. 2. Right 38, left 30, not stated 1. Direct violence 33, indirect 28; not stated 8; middle third 39, upper third 19, lower third 11; 2 transverse just above condyles; 2 external condyle; 2 greenstick. No shortening in several cases after transverse fracture of the middle of the shaft; in all other cases shortening varying from $\frac{1}{2}$ inch. *Treatment.*—Long outside, extension and anterior and outer plaster of Paris almost invariably employed; 1 both femora broken in a child (see “Multiple Fractures”), plaster of Paris and vertical suspension. *Complications.*—Two contracted diphtheria; 1 gout; 1 gout and cystitis; 1 whooping-cough; 1 dislocation of shoulder; 1 contusion of shoulder; 1 delirium tremens; 2 delayed union.

Fatal case.—Male, æt. 4 $\frac{1}{2}$, admitted with fracture of the femur $\frac{2}{3}$ / $\frac{1}{3}$ left. Died on the eleventh day of diphtheria (see Medical Notes).

Fatal case.—Male, æt. 84, admitted with fracture of left femur $\frac{1}{3}$ / $\frac{2}{3}$. Had fractured the bone in the same spot seventy years before. *Treatment.*—Long outside and anterior plaster. Patient very feeble. Suffered from gout and cystitis. Refused food and died in 3 weeks. P.M.—Apparently well nourished. Costal cartilages partly ossified. Transverse fracture of left femur; no union. Lungs emphysematous. Heart: auricles dilated; ventricles small; cardiac muscle dark brown; valves thickened but no puckering or incompetence; not much atheroma of aorta; liver small; gall-bladder full of stones. Kidneys small; cortex thin; spleen very atrophied. Brain: much wasting of convolutions; much atheroma of cerebral arteries; prostate greatly enlarged; bladder inflamed; contained fetid pus; walls much thickened.

Shaft, simple comminuted.—Male 1. C. 1. Right side. Male, æt. 9. Run over; much comminution; extension 6 lbs., long outside, plaster; $\frac{3}{4}$ in. shortening on discharge.

Shaft, compound.—Male 3. C. 2, D. 1. Left 2, right 1. All direct violence. 1. Position of fracture $\frac{2}{3}$ / $\frac{1}{3}$. Male, æt. 73; oblique; wound $\frac{1}{2}$ inch; much deformity; ether; antiseptics; plaster, long outside; extension; sent out cured on the 119th day.

2. $\frac{1}{3}$ / $\frac{2}{3}$. Male, æt. 5. Run over; wound 4 inches; spray, antiseptics, &c.; much difficulty in reducing deformity; delirium and rise of temperature (103.2°) during first week; wound did not heal by first intention; after wound had healed child fell out of bed by accident, and refractured the bone; left hospital 162nd day; shortening 1 $\frac{1}{2}$ inches.

3. *Fatal.*—Male, æt. 43. Severe injury to thigh on railway; extensive scalp wound; conscious on admission, but nearly pulseless; temp. 95°; lived 2 hours. P.M.—Besides the extensive injury to left thigh; seventh, ninth, tenth, eleventh and twelfth ribs on right side were fractured; pleura not lacerated; scalp wound over left parietal bone; no fracture of skull, but some blood beneath dura mater over left hemisphere; organs natural.

Neck.—Males 7, females 11. C. 18. *Intracapsular* 11. Right 6, left 5; all indirect violence; æt. 61, 62, 68, 60, 67, 77, 76, 60, 74, 69, 58. Male 1, females 10; 2 said to be impacted, 1 complicated with contusion of shoulder. *Extracapsular* 7; all direct violence; right 6, left 1; æt. 26, 52, 70, 69, 57, 59, 58. Males 6, female 1; 2 impacted.

Fracture of patella.—Males 15, females 8, C. 23. Right 8, left 14; not stated 1. Muscular action 17, direct violence 6. No note of comminution in any. All transverse; 2 same patella broken 16 and 20 months respectively previously; opposite patella fractured before in 3 cases; 2 synovitis of opposite knee; 1 scalp wound. *Treatment.*—Strapping and plaster of Paris. In some cases a McIntyre and icebag was employed at first. In no case was the joint aspirated. Cases sent out in plaster or leather; in 2 cases no interval between fragments could be detected, in 1 case about $\frac{1}{8}$ inch. In all others the interval between the fragments varied when patient left hospital from $\frac{1}{4}$ inch and upwards.

Fracture of tibia and fibula; simple.—Males 93, females 23. C. 114, R. 1, D. 1. Right 64, left 52. Direct violence 24, indirect 92. Lower third 56; Pott's 42; middle third 11; upper third 6; 1, boy \ae t. 9, separation of upper epiphysis. *Complications.*—Delayed union 1; pregnant 8 months 1; scalp wound 1; erysipelas 1; delirium tremens 2; contusion of thigh 1; synovitis of opposite knee 1. All treated by the *immediate* application of plaster of Paris.

Fatal case.—Female, \ae t. 82. Fracture of left tibia and fibula $\frac{2}{3}/\frac{1}{3}$. *Treatment.*—Plaster of Paris. Patient did well till the twenty-fifth day, when she commenced to vomit, and died the following day; temp. 101° . P.M.—Body thin, fracture not yet united. Costal cartilages not calcareous. Heart: left ventricle a little hypertrophied, valves healthy, aorta dilated. Lungs oedematous. Liver and spleen atrophied. Kidneys normal. Gall-bladder full of faceted stones. Right femoral canal contained an omental hernia, which was reduced with difficulty, but was not strangulated.

Compound.—Males 11. C. 7, R. 3, D. 1. Right 6, left 5; direct violence 5, indirect 6.

1. Position $\frac{2}{3}/\frac{1}{3}$. Wound slight but some hæmorrhage. Antiseptics; Neville's splint and then plaster of Paris.

2. Position $\frac{2}{3}/\frac{1}{3}$. Wound slight. Antiseptics; plaster of Paris. Eczema of leg very troublesome; retarded recovery.

3. Position $\frac{2}{3}/\frac{1}{3}$. Wound 1 inch. Antiseptics; Neville and afterwards plaster.

4. Position $\frac{2}{3}/\frac{1}{3}$. Wound 1 inch. Antiseptics; Neville and afterwards plaster. Went in plaster; superficial wound; ungu. zinci.

5. Position $\frac{2}{3}/\frac{1}{3}$. Wound slight. Antiseptics and plaster; went in gummed plaster on the fifty-fifth day; bones not united.

6. Position $\frac{2}{3}/\frac{1}{3}$. Tibia protruding. Counter-openings made. All antiseptic precautions. Went with a small superficial wound. Iodoform gauze and plaster. No complications.

7. Position $\frac{2}{3}/\frac{1}{3}$. Tibia protruding. Reduction; antiseptics; Neville; rapid recovery.

8. Position $\frac{1}{2}/\frac{1}{2}$. Much damage to soft parts; several counter-openings; suppuration and sloughing; amputation below knee; recovery. Before discharge a curious failure in the muscular power of the hands and loss of sensation of skin over tibia, &c., was noticed, ? disease, not diagnosed.

9. Position $\frac{1}{2}/\frac{1}{2}$. Wound small. Antiseptics; delayed union. Left on the fifty-fifth day.

10. Tibia ? comminuted. Small wound but much hæmorrhage. Counter-

openings. On two occasions necrosed portions of bone were removed. Attack of erysipelas. Left hospital at last with a small wound in a plaster-of-Paris splint with a window.

11. *Fatal case.*—Male, æt. 45. Extensive laceration of soft parts and wound of knee-joint. *Treatment.*—Amputation of thigh. Death took place 30 hours later. P.M.—Thigh amputated; no injury elsewhere; organs healthy.

Simple comminuted.—Males 3. C. 3. Left 2, right 1; indirect violence 2, direct 1; 2 lower third, 1 middle third. In each tibia comminuted. All treated by plaster of Paris; 1 delayed union.

Compound comminuted.—Male 1, female 1. C. 2. Right 1, left 1. Both caused by direct violence.

1. Male, æt. 57. $\frac{2}{3}$ / $\frac{1}{3}$. Wound small. Antiseptics; plaster of Paris. Left (with wound healed) in plaster on the twentieth day.

2. Female, æt. 39. Much damage to soft parts. Amputation of thigh; recovery.

Fracture of tibia.—*Simple.*—Males 24, females 4. C. 27, C. 1. Right 18, left 9; not stated 1; direct violence 18, indirect 8; not stated 1; lower third 19, middle third 6, upper third 3. All treated by immediate application of plaster of Paris. *Complications.*—One synovitis of opposite knee; 2 much contusion of soft parts; 1 no union when discharged in gummed plaster on the thirty-eighth day.

Compound.—Male 1. C. 1. Left; direct violence. Male, æt. 24. Small wound. Antiseptics; plaster. Position $\frac{1}{3}$ / $\frac{2}{3}$. Went with a windowed plaster on the thirty-third day. No complications.

Compound comminuted.—Male 1. C. 1. Right; direct violence. Male, æt. 35. Wound opposite tubercle on inner side; kick of horse; knee-joint distended. Antiseptics; counter-opening at back. Suppuration with high temperature ensued. Knee-joint aspirated, and afterwards (fifteenth day) incised and irrigated. Condition did not improve, temp. 102.4°, &c., and on seventeenth day thigh was amputated. He left hospital a month later with the stump healed.

Fracture of fibula.—*Simple.*—Males 38, females 4. C. 41, R. 1. Right 24, left 14; not stated 4; direct violence 23, indirect 15; not stated 4; upper third 1, middle third 2; lower third 38 (several Pott's fractures, with effusion into ankle and without injury to internal malleolus). *Complications.*—Weakness and tenderness of extensors of forearms in one case? alcoholic or due to lead; 1 case rupture of anterior tibial vessels and pyæmia (see Special Table III).

Compound.—Male 1. C. 1. Male, æt. 6. Run over. $\frac{2}{3}$ / $\frac{1}{3}$. Wound $\frac{1}{2}$ inch. Antiseptics; plaster. Discharged cured thirty-ninth day.

Fracture of foot.—*Simple.*—Male 1. C. 1. Male, æt. 50. A fall. Fracture of second, third, and fourth metatarsal bones, left; large scalp wound; foot fixed in plaster.

Compound.—Male 2. C. 2. Both crushes, 1 tramcar, 1 railway; 1 metatarsal bones, 1 phalanges and large lacerated wound; both left foot.

Compound comminuted.—Male 6, females 2. C. 8. Right foot 3, left foot 5.

1. Run over. Incisions; antiseptics; amputation of big toe.

2. Run over. Amputation of second, third, and fourth toes.
3. Crushed by a heavy weight. Amputation of big toe.
4. Injury with an axe. Amputation of third toe, &c.
5. Crush, specially of great toe. Several pieces of bone came away in the dressings.
6. Run over; smashed toes; stripping up of soft parts. Amputation lower third of leg.
7. Run over. Man, æt. 64, crushed toes. Hey's amputation; sloughing of soft parts. Amputation below knee. Specimen showed posterior tibial blocked above ankle, and disorganisation of calcaneo-cuboid joint. Much burrowing of pus.
8. Fall from a height; os calcis comminuted. Counter-openings; antiseptics; Neville's splint.

Multiple fractures.—Males 8, females 3. C. 8, R. 1, D. 2.

1. Fractured scapula and ribs; extensive emphysema; scalp wounds.
2. Double Colles's fracture; scalp wound.
3. Fractured clavicle and ribs; scalp wounds.
4. Fracture of olecranon and external condyle of humerus.
5. Fracture of both patellæ.
6. Fracture of both femora.
7. Fracture of femur and ribs.
8. Fracture of humerus and femur.
9. Fracture of both femora.

Fatal cases.

10. Fracture of left femur; crush of right foot. Male, æt. 68. Amputation lower fourth of leg. Died on sixth day of bronchitis. No P.M.
11. Male, æt. 86. Fracture of femur and pelvis, and rupture of urethra. Perineal puncture; catheter placed in bladder and limb fixed in plaster. Hiccough, rapid pulse, restlessness, &c., supervened, and he died on the fourth day. P.M.—Costal cartilages unossified; fracture of left femur; right pubic bone detached from symphysis and splintered; membranous urethra cicatricial, no evidence of recent laceration; middle lobe of prostate much enlarged. Bladder much hypertrophied; mucous membrane showed many recent hæmorrhages. Heart: right side dilated. Gall-bladder full of faceted stones. Spleen and kidneys very small. (If a "multiple fracture" was found post mortem, and *not* diagnosed during life, it would not be in this list.)

Compound.—Male 1. D. 1. Male, æt. 32. Railway smash. Compound fracture of right tibia and fibula; simple fracture right clavicle; fracture of ribs on both sides; emphysema of chest and abdominal wall. Death 3 hours after admission. P.M.—Injuries as above and scalp wounds; no fracture of skull. Convex surface of brain covered with a thin layer of liquid blood; right third to twelfth ribs broken; pleuræ lacerated; base of right lung lacerated; left fourth and fifth ribs fractured, pleura intact; small lacerations of posterior aspect of right kidney. Other organs healthy.

Compound comminuted.—Males 2. D. 2.

Fatal cases.

- Male, æt. 26. Railway smash of both legs; much blood lost before admission;

temp. 96°; rallied a little, and then amputation through condyles of both femora was performed. Patient died 3 hours later. P.M.—All organs natural. The lungs presented the ordinary hyperæmia in dependent parts.

Male, æt. 28. Railway injuries. Compound comminuted fracture of both legs; right hand crushed; scalp wounds. Died in 5 hours. P.M.—Organs natural but anæmic. Injuries as above.

Wounds of joints.—Males 8, female 1. C. 6, R. 1, D. 2. All involving *knee*. Right joint 5; left joint 4.

Male, æt. 42. Clean cut, with glass. Irrigation through opening. Antiseptics; plaster. Left well on twenty-second day.

Male, æt. 6. Needle ran into knee. Suppuration of joint. Antiseptic incision and irrigation. Subsequently the pus burrowed in various directions, and counter-openings had to be made. Left on the 160th day in a leather splint.

Male, æt. 7. Wound made by a knife. Antiseptic irrigation and plaster splints. No complications. Left well on fourteenth day.

Male, æt. 7. Fall on pavement; wound small; carbolic irrigation under spray; suppuration. On second day lateral incisions were made and irrigation again carried out. Left with ankylosed joint in leather splint, 107th day.

Male, æt. 4. Wound caused by glass. Carbolic irrigation; plaster splint. Left well on eighteenth day. Developed whooping-cough in ward.

Male, æt. 7. Run over. Carbolic irrigation; McIntyre. Also contusion of left foot. Left well on twentieth day.

Male, æt. 4. Fall on to the head of a hammer. Punctured wound. Antiseptics; joint not irrigated. Plaster splint. Synovial effusion in knee. Left well in 15 days.

Fatal cases.

Male, æt. 62. Whilst killing a sheep, knife entered knee-joint. Wound cleaned and antiseptic dressing and splint applied. Suppuration set in with slight septicæmia on seventh day. Joint was laid open and irrigated, but febrile condition became worse. Thigh amputated on tenth day, and he died the following day with the thermometer registering 105·5°. No P.M.

Female, æt. 8. (See Special Table III.—Pyæmia.)

Traumatic synovitis.—(Not caused by wound.)

Hip.—Male 1. C. 1. Male, æt. 10. Fall off table 10 days before admission. On examination joint distended, &c. In splint 60 days. Left hospital quite well; movements free; no pain, fulness, &c.

Knee.—Males 8, females 7. C. 13, R. 2. McIntyre and icebag, usual treatment at first, followed by Scott's dressing, strapping, and plaster. One case blistered, 2 cases hæmarthrosis, diagnosed by aspirator. All due to direct violence except one, which seemed ? to be caused by slipping of internal semi-lunar cartilage, as there was much tenderness over region of cartilage.

Ankle.—Males 2, females 1. C. 2, R. 1. Tumbled downstairs, thrown from a horse, and fell out of cab respectively. *Complications.*—Wounds of face, various contusions. *Treatment.*—Lot. Plumbi, ice, Scott's dressing, strapping and plaster splints. One case had bleeding from ear, tympanic membrane ruptured; left well on nineteenth day.

SPECIAL TABLE I.—*Strangulate*

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	Labourer*	M.	52	R.	Some years	5 hours	Enterocoele
2	„	M.	39	L.	18 months	14 hours	„
3	Dealer	M.	26	L.	22 hours	22 hours	„
4	Infant	M.	5 months	L.	Congenital	A few hours	„
5	Barman	M.	30	L.	Some years	6 hours	„
6	Butcher	M.	34	L.	14 years	6 hours	„
7	Painter	M.	28	R.	A few days	12 hours	„
8	Married	F.	44	L.	2 years	12 hours	„
<i>Hernia</i>							
9	Messenger	M.	62	R.	Many years	12 hours	Enteropiplocele
10	Shopman	M.	21	R.	8 months	5 hours	Enterocoele
11	—	M.	69	L.	1 week	1 week	Enteropiplocele

Hernia.—Inguinal.

Treatment.	No. of days in hospital.	Result.	Remarks.
Ice, taxis	8	C.	
Ice, taxis; ultimately spontaneous reduction	7	C.	Testicles undescended.
Ice; spontaneous reduction	2	C.	
Chloroform, taxis	1	C.	
Ice; spontaneous reduction	1	C.	
Warm bath; ice-bag; spontaneous reduction	3	C.	
Ether, taxis	12	C.	Hydrocele of tunica vaginalis.
Ether, taxis	7	C.	

omy.

Ether; herniotomy; knuckle of bowel in centre of piece of omentum; omentum very adherent; antiseptic precautions	4	D.	The symptoms of obstruction dated from time of his being run over the abdomen by the wheel of a light trap. After operation albuminuria and delirium supervened; some evidence of peritonitis. Temp. sub-
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normal; much collapse; comatose 1 hour before death. P.M.—Acute peritonitis; abdominal cavity contained light yellow liquid fæces; small intestine ruptured 78 inches from ileo-cæcal valve; slit-like opening lengthwise in the gut wall, $\frac{1}{2}$ inch long with clean-cut edges; liver fatty; mitral and aortic disease; coronary arteries atheromatous.

Ether; herniotomy; suture of gut, bowel dark, still polished, deep drain; iodoform and antiseptics, &c.	6	D.	When reduction was attempted after division of the stricture, a fæcal discharge seen coming from region of neck of sac; on pulling gut down an opening involving half the cir-
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cumference was found; bowel not gangrenous; opening sutured with silk, and gut fastened to neck of sac. Four days after operation peritonitis. Patient etherised; boracic irrigation of abdominal cavity. Died 2 days later. P.M.—Peritonitis; suppuration of operation wound; in the pelvis was found a black gangrenous loop of intestine; viscera healthy.

Ether; herniotomy; antiseptics; loop of small intestine black; polish impaired	1	D.	Had been treated with purgatives and taxis for 1 week before admission. After operation vomiting continued till death, 6½ hours later. P.M.—Some coils of bowel found under-
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neath skin on removing sutures of incision wound; a distinct pouch seen lying between peritoneum and iliac fascia, and communicating with the inguinal canal on the distal side of the internal ring; a knuckle of intestine could be stowed in this diverticulum without being perceptible externally; piece of small intestine, 4 inches in length, 12 feet from the ileo-cæcal valve deeply congested, as is also corresponding portion of mesentery; other viscera healthy, except gall-bladder, which is full of gall-stones.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
12	Servant	F.	34	R.	12 years	2 days	Enterocoele
13	Married	F.	53	R.	24 years	2 days	„
14	„	F.	54	R.	18 hours	18 hours	Enteroplocele
15	Publican	M.	23	R.	12 years	4 days	Enterocoele
16	Carman	M.	23	L.	3 years	10 hours	Enteroplocele
17	Clerk	M.	52	R.	10 years	18 hours	„
18	Sawdust dealer	M.	21	R.	Congenital	2 days	Enterocoele
19	—	M.	76	R.	20 years	3 days	„

Radical Cure.

Treatment.	No. of days in hospital.	Result.	Remarks.
Ether; clear fluid in sac; no omentum; slight adhesion of bowel to sac; gut severely nipped at strictured point; polish not lost; sac removed, neck ligatured	24	C.	No impulse on coughing when discharged. Uninterrupted recovery. Sent out without truss.
Ether; hernia very large; a pint of serous fluid escaped from sac when opened; intestine much congested in places; sac removed, neck ligatured; boracic irrigation; boracic lint used for the dressings	54	C.	Recovery delayed by some suppuration in labium. No sign of hernia on leaving hospital.
Ether; sac contained omentum and a "Richter's hernia" of small gut; neck of sac ligatured; external pillars brought together with catgut	60	C.	Convalescence retarded by slow healing of wound. Sent out with a truss. No recurrence of hernia.
Ether; sac opened, contained pus; knuckle of intestine very dark, flakes of lymph adherent to it; sac removed, neck tied with thick catgut; 1 catgut suture in external pillars; spray, antiseptic dressings	1	D.	Case was one of direct inguinal hernia. No P.M. Peritonitis? Temp. 96°. Patient never rallied from the operation.
Ether; sac opened, clear serum escaped; intestine purple in colour; considerable quantity of omentum; sac removed; spray and iodoform dressings	42	C.	Whilst sac was being separated a gush of blood came from abdominal cavity; incision was extended upwards 3 inches, omental stump pulled down, and an artery was observed spouting above the ligature. Ten days after operation abscess of lower part of scrotum, convalescence otherwise satisfactory.
Hernia small in inguinal canal; ether; sac opened; bowel much congested; neck of sac ligatured; antiseptic dressings	23	C.	No impulse on coughing when patient left hospital. During operation, when intestine was pulled down for the purpose of examining the strictured portion, a longitudinal slit, $\frac{3}{4}$ inch long, was observed in the serous coat of the bowel.
Ether; sac contained turbid brown fluid and 6 inches of small intestine; latter congested, polish unimpaired; neck of tunica vaginalis divided, proximal portion ligatured; canal sewn up with three catgut stitches; deep drain; spray; antiseptic dressings	34	C.	No sign of protrusion on discharge. During latter part of operation chloroform given instead of ether. The gut was constricted at both internal and external rings; the testis had only descended to the external ring. Sent out with a horse-shoe truss.
Chloroform; hernia large; sac contained much straw-coloured fluid; intestine slightly congested, not tightly nipped; sac dissected out, and its neck ligatured in two parts with silk; iodoform dressings	30	C.	Patient very restless and troublesome after operation. Senile dementia? Wound healed 10 days after operation, but opened again a week later, ? to give exit to silk.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
20	Clerk	M.	41	R.	14 hours ?	14 hours	Entero-epiplocele
21	Boat builder	M.	41	L.	24 years	24 hours	Enterocele
22	Bus conductor	M.	28	L.	Congenital	2 days	Entero-epiplocele
23	Tram-man	M.	21	R.	5 hours	5 hours	Enterocele
24	—	M.	30	L.	2 days	2 days	„
25	Engineer	M.	55	L.	4 years	3 days	„

Note.—One case of strangulated inguinal hernia occurred in the medical wards. The One case of strangulated right inguinal hernia occurred in ophthalmic ward in a marine, 1 foot from the cæcum, was tightly nipped just within the right inguinal canal;

Treatment.	No. of days in hospital.	Result.	Remarks.
Ether; sac opened, omentum adherent; congestion of intestine not marked; sac removed and neck ligatured; antiseptics	32	C.	Whilst sac was being dissected out bright blood issued from its neck; wound enlarged upwards, and a bleeding point of omentum was found lying in angle between two ligatures. Hernia probably of old standing, unknown to patient. See 'B. M. J.,' Oct. 1st, 1887. Left without truss; no sign of protrusion.
Ether; sac opened; intestine dark, polish not good; two constricting bands in canal; sac dissected out, and neck ligatured high up; no sutures in pillars; spray, iodoform and salicylic wool	49	C.	Ten days after operation dressing was soaked in blood; clots found in wound; much extravasation in scrotum; no bleeding point discovered; convalescence not otherwise retarded. No impulse on coughing when he left the hospital.
Ether; taxis, partial reduction; sac opened, found to be the unclosed processus vaginalis, much fluid escaped; sac dissected up, divided and ligatured in two halves; it contained small piece of omentum, which was adherent, both were cut away; stump ligatured with cat-gut; no spray; carbolic irrigation, iodoform and salicylic wool	19	C.	Uninterrupted recovery. Went out with a truss.
Ether; gut much congested, dark in colour; stricture very tight; sac cut away, neck ligatured; deep drain; iodoform	23	C.	No truss required on discharge.
Ether; sac opened; intestine black and dull; sac cut away; neck ligatured; antiseptics	1	D.	Patient collapsed on admission; temp. 96°; never rallied. P.M.—Loop of intestine 3½ inches long, deeply congested; middle and internal coats not much altered; ring of constriction clearly marked at either end of loop, which was 8 feet 9 inches from ileo-cæcal valve; kidneys and lungs congested.
Chloroform; sac opened; intestines dark, but polish not lost; incision extended upwards; free hæmorrhage then occurred; vessel tied; boracic irrigation; neck of sac ligatured; antiseptic dressings	1	D.	Dressings were soaked with bloody fluid twice before death, which took place 10 hours after operation. P.M.—Much subperitoneal hæmorrhage in neighbourhood of operation wound; also extravasation into left side of scrotum; internal ring closed by sutures; deep epigastric

artery divided, both ends tied; intestine (which had been strangulated) 21 inches in length and 8 feet above valve purple in colour; some rents on peritoneal surface; line of demarcation not abruptly defined; heart dilated and hypertrophied; no other visceral lesion.

patient was a man. Radical cure performed. Convalescence was unimpeded aged 65. He died before any operation was performed. P.M.—A knuckle of small intestine above much distended, below collapsed; all other viscera healthy.

Strangulated Hernia.—

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
26	Married	F.	36	L.	6 years	4 hours	Enterocele
27	Married	F.	37	L.	4 days	1 day	Entero-epiplocele
<i>Hernio</i>							
28	Married	F.	54	L.	4 days	2 days	Enterocele
29	Married	F.	46	L.	14 years	3 days	Entero-epiplocele
30	Married	F.	50	R.	20 years	24 hours	Epiplocele
31	Single	F.	39	R.	10 years	5 days	Entero-epiplocele
32	—	F.	75	L.	6 years	4 days	„
33	Married	F.	42	L.	2 years	24 hours	„

Femoral.

Treatment.	No. of days in hospital.	Result.	Remarks.
Ice-bag, taxis	1	C.	
Ice-bag, taxis	11	C.	
<i>tomy.</i>			
Ether; division of stricture at Gimbernât's ligament; small knuckle of intestine, with polish lost; neck of sac left open after return of intestine; antiseptics	20	C.	No sign of hernia on discharge.
Ether; bowel much damaged at the two points of constriction; sac removed; neck not ligatured; antiseptics	26	C.	Went out with truss.
Ether; antiseptics; removal of lump in crural canal	22	C.	Doubtful whether tumour was omental or glandular.
Ether; antiseptics; omentum very dark; was ligatured and removed; small knuckle of intestine of a deep maroon colour, except at point of constriction, where it was mottled white and black; sac removed, neck not ligatured; drainage-tube passed into abdominal cavity	5	D.	P.M.—Nine feet from the ileo-cæcal valve a knuckle of intestine was found of a greenish-black colour, in which there was a small perforation; no peritonitis; no extravasation of fæces; congestion of bases of both lungs; other organs healthy; some pus about operation wound.
Ether; antiseptics; sac contained $\frac{1}{2}$ oz. of blood-stained fluid; gut and omentum adherent to sac; intestine not dull, but rather dark in colour; stricture divided; sac not interfered with	10	D.	P.M.—Wound healed; omentum adherent in vicinity of left crural ring; large intestine distended with flatus; bladder full of bloody urine without clot, ? due to catheterisation; there was a small tumour, $2\frac{1}{2}'' \times 1\frac{1}{2}''$, hanging from the right broad ligament; congestion of right lung; cysts in the kidneys; brain very small; moderate atheroma of arteries at base.
Ether; accidental injury to serous coat of gut during first incision; gut tightly constricted; recovery doubtful at strictured spot; sac left, neck not sewn up; drainage; antiseptics	3	D.	P.M.—Wound suppurating; acute peritonitis, most intense in lower part of abdominal cavity; a loop of intestine, 3 inches long and 3 feet from the cæcum, was found intensely congested and of a deep purple colour; at each end the line of junction with the rest of the gut was sharply marked; internally there was a linear ulcer of the mucous membrane at the points of strangulation; at one point in the loop the peritoneum showed a clean incised wound, which had evidently been harmless; small intestine contained muco-pus, and the mucous membrane in its whole extent showed evidence of acute catarrh.

Herniotomy with Resection

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
34	Married	F.	46	R.	6 days	6 days	Entero-epiplocele
<i>Herniotomy with</i>							
35	Coal-porter	M.	40	L.	15 years	24 hours	Enteroccle ?
36	Married	F.	35	R.	4 days	24 hours	„
37	Shop-assistant	F.	37	R.	8 days	3 days	„ ?
38	Married	F.	54	L.	10 months	24 hours	Entero-epiplocele
39	Widow	F.	73	R.	34 years	12 hours	Enteroccele
40	Married	F.	51	R.	12 months	30 hours	Entero-epiplocele
41	Married	F.	44	R.	?	?	Enteroccele
42	Widow	F.	53	L.	2 years	10 hours	Entero-epiplocele
43	Widow	F.	54	R.	2 years	7 days	„

of Gangrenous Bowel.

Treatment.	No. of days in hospital.	Result.	Remarks.
Ether; skin over tumour red and shining; on opening sac much fœcal pus escaped; several inches of gut and a mass of omentum were found gangrenous; resection of gangrenous gut, edges stitched to each other and to the margins of the wound; antiseptic compresses	1	D.	P.M.—No peritonitis; resection of bowel has been performed 4 feet from cæcum; condition of resected ends of bowel, as far as the operation technique is concerned, is perfect; atheroma of aorta; other viscera healthy.
<i>Radical Cure.</i>			
Ether; on opening sac a quantity of fluid escaped, and the intestine seemed to slip up into the abdomen at the same moment, so that nothing was seen in the sac; sac removed; iodoform, &c.	8	D.	P.M.—Wound healed; a knuckle of small intestine, 1½ inches long, was found that was distinctly congested; 2 pints of sero-purulent fluid in abdominal cavity; heart hypertrophied and dilated; aortic valves incompetent; the viscera generally were in a state of congestion.
Ether; bowel much congested; incision of Gimbernât's ligament; sac cut away, neck ligatured; antiseptics	22	C.	Patient was 3 months pregnant. No sign of hernia on discharge; to wear a light truss.
Clinical notes deficient. Sac removed, neck ligatured	30	C.	No sign of hernia on discharge.
Ether, spray; much fluid in sac; omentum cut away; intestine of a dark maroon colour, polish good; Gimbernât's ligament incised; sac removed, neck ligatured	49	C.	Convalescence retarded by suppuration of wound. No sign of hernia on discharge.
Ether; sac opened; gut not much discoloured; neck of sac sewn up; carbolic spray, &c.	31	C.	No sign of hernia on discharge. Three days after operation delirium supervened and continued, so that when she left St. Thomas's she was taken to Bethlehem Hospital.
Ether; sac opened; much reddish fluid escaped; omentum cut away, ligatured with catgut; intestine not properly examined, as it suddenly slipped back; sac removed, neck ligatured; antiseptics	65	C.	No sign of hernia on discharge; a truss to be worn.
Ether; sac opened; intestine scarcely discoloured; sac removed, neck ligatured; spray, &c.	21	C.	No sign of hernia.
Ether; sac opened; loop of small intestine deeply congested, but with no loss of polish; omentum ligatured and removed; sac cut away, neck tied up; iodoform, &c.	24	C.	No impulse on coughing, or other sign of hernia on discharge; to wear a light truss.
Ether; sac opened; knuckle of small intestine deeply congested; vermiform appendix in sac; omentum cut away; gut and vermiform appendix returned; sac dissected out, neck ligatured; iodoform, &c.	22	C.	No impulse on coughing, or other sign of hernia on discharge; to wear a light truss.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
44	Married	F.	52	L.	14 months	4 days	Enterocoele
<i>Strangulated Herniotomy with</i>							
45	Married	F.	52	—	18 years	2 days	Entero-epiplocele
46	Married	F.	40	—	?	?	„

*Hernia not
Radical Cure*

No.	Occupation.	Sex.	Age.	Side.	Duration.	Reducible or irreducible.	Nature of hernia.
1	—	M.	23 months	L.	Congenital	Reducible	Enterocoele, with fluid in sac
2	Theatre	M.	51	L.	10 years	Irreducible	Enterocoele

Treatment.	No. of days in hospital.	Result.	Remarks.
Ether; sac opened; knuckle of intestine very dark, polish still good; sac removed, neck ligatured with catgut; edges of crural ring stitched together; antiseptics, &c.	23	C.	No sign of hernia on discharge.
<i>Hernia.—Umbilical.</i>			
<i>Radical Cure.</i>			
Ether and chloroform; sac opened; large intestine and omentum discovered, former congested, latter adherent; sac cut away; suture of peritoneum and linea alba with catgut and silk; iodoform dressings, &c.	34	C.	No sign of hernia on discharge.
Ether; a knuckle of small intestine and large portion of omentum in sac; omentum removed, neck of sac carefully sutured up; antiseptics	1	D.	P.M.—No peritonitis; passage from abdomen to sac completely closed; a loop of intestine, 4 inches long, was found much injected, but in a recoverable condition; no visceral disease elsewhere.

*Strangulated.**Operations.—Inguinal.*

Treatment.	No. of days in hospital.	Result.	Remarks.
Chloroform; incision of sac; flakes of lymph escaped with the serous fluid; neither gut nor omentum seen in sac; neck of sac ligatured with catgut; edges of sac stitched to skin; iodoform, &c.	13	D.	P.M.—Abdomen only examined; a clot as large as a hen's egg was found in the left half of the scrotum; the opening from the abdomen into the inguinal canal on the left side closed by lymph and sutures; a pint and a half of serous fluid was found in abdominal cavity; numerous adhesions between great omentum and parietal peritoneum, and between liver and spleen and diaphragm; scattered tubercles were observed over both layers of the peritoneum; mesenteric and iliac glands caseous; no adhesions between intestinal coils.
Ether; sac opened; intestine adherent; neck of sac ligatured; pillars of ring brought together with silk sutures; antiseptics	37	D.	P.M.—Edges of wound sloughy; peritonitis affecting the part of the peritoneum in the neighbourhood of the incision; the coils of gut in this neighbourhood are adherent to one another and to the abdominal wall; thoracic aorta much dilated and extremely calcareous; heart small; kidneys granular.

No.	Occupation.	Sex.	Age.	Side.	Duration.	Reducible or irreducible.	Nature of hernia.
3	Carpenter	M.	19	L.	6 months	Reducible	Epiplocele
4	Platelayer	M.	29	R.	7 years	Irreducible	„
5	Carpenter	M.	19	R.	9 months	„	„ ?
6	Labourer	M.	55	L.	16 years	„	?
7	Coal-porter	M.	38	L.	3 years	Reducible	Enterocoele
8	Carman	M.	34	L.	10 years	Irreducible	Epiplocele
9	Auctioneer	M.	31	R.	Congenital	„	Epiplocele, with fluid
10	Grocer	M.	23	R.	12 months	„	Epiplocele
11	Labourer	M.	48	L.	2½ years	„	Entero-epiplocele

Treatment.	No. of days in hospital.	Result.	Remarks.
Ether; sac opened; omentum within ligatured and removed; neck of sac tied with silk; the pillars of the external ring were closed by one suture of catgut, No. 4; antiseptics	43	C.	Went without a truss.
Ether; sac opened; omentum within arranged in the form of a tube; this was ligatured with catgut and cut away, and the sac was similarly treated; a thick catgut ligature brought together the pillars of the external ring; antiseptics	54	C.	No sign of hernia on discharge; no truss. Two days after the operation the dressings were found soaked with blood; the wound was opened up, but no large bleeding point was found. Convalescence was retarded by suppuration.
Incision of sac; radical cure. Notes imperfect	51	C.	Convalescence was delayed by suppuration and cellulitis of the scrotum, and some orchitis. Patient went out with a truss.
Ether; wall of hernial sac $\frac{1}{2}$ of an inch in thickness; sac contained some straw-coloured fluid; neck ligatured with kangaroo tendon; sac removed; pillars of ring sutured with wire; carbolic dressings, &c.	62	C.	No sign of hernia on discharge; no truss. Patient suffered from retention for 7 days after the operation.
Ether; sac dissected out and removed; neck ligatured; antiseptics	30	C.	No truss required on discharge.
Ether; sac contained some fluid and a mass of omentum; the latter was ligatured with silk and cut away; sac removed, neck tied up; antiseptics	55	C.	Towards the end of the operation some blood welled up through the neck of the sac; the omental stumps were therefore pulled down and again ligatured. Convalescence retarded by some localised peritonitis, and subsequently by profuse suppuration of the wound.
Ether; the sac contained much fluid and a good deal of omentum; omentum transfixed, ligatured, and removed; sac dissected up, neck secured with silk; iodoform dressings, &c.	40	C.	No sign of hernia on discharge; no truss
Ether; sac contained a mass of omentum; omentum returned into abdominal cavity; sac dissected up, neck ligatured with catgut; external pillars brought together with two catgut ligatures; counter-opening made at lower part of scrotum; iodoform and salicylic wool dressings	24	C.	No sign of hernia on discharge; no truss
Ether; hernia discovered during operation to be of the "infantile" variety; sac contained adherent omentum, completely enveloping a small knuckle of intestine; the omentum was ligatured and removed; sac dissected up, neck tied with silk; another small omental hernia was then found behind, and treated in a similar way; spray, carbolic and salicylic wool dressings	44	C.	No sign of hernia on discharge; no truss. Convalescence retarded by an attack of bronchitis, and cramps in the abdomen similar to those from which he had often suffered since having cholera in India. The hernia first operated upon was surrounded by the constituents of the cord.

Radical Cure

No.	Occupation.	Sex.	Age.	Side.	Duration.	Reducible or irreducible.	Nature of Hernia.
12	Servant	F.	31	R.	6 years	Reducible	?
13	Laundress	F.	52	R.	27 years	"	Enterocoele

Hernia treated
Ingu

14	Railway	M.	21	R.	2 years	Reducible	Enterocoele
15	Cabdriver	M.	34	R.	1 day	Irreducible	?
16	—	M.	65	R.	Many years	Reducible	?
17	Carman	M.	70	R.	20 years	Irreducible	?
18	Labourer	M.	20	R.	?	"	?
19	Cook	M.	65	R.	Many years	"	?
20	—	M.	3 months	R.	Congenital	"	Entero-epiplocele
21	Packer	M.	44	R.	6 months	"	Epiplocele ?
22	Clerk	M.	41	L.	2 weeks	"	"
23	Blacksmith	M.	53	R.	7 years	Reducible	Entero-epiplocele
24	Hawker	M.	27	R.	18 months	Irreducible	" ?
25	Horsekeeper	M.	28	L.	4 years	"	Epiplocele

Fem

26	Widow	F.	66	L.	?	Irreducible	Entero-epiplocele
27	Nil	F.	78	L.	3 weeks	"	"

Umbi

28	Widow	F.	38	—	?	Irreducible	Entero-epiplocele
29	Railway porter	M.	47	—	12 years	"	"
30	Married	F.	31	—	7 years	"	"
31	Widow	F.	54	—	4 years	"	Epiplocele ?

Operations.—Femoral.

Treatment.	No. of days in hospital.	Result.	Remarks.
Ether; sac not opened; neck ligatured, and body cut away; catgut used throughout; iodoform; carbolic gauze and salicylic wool dressings	32	C.	No sign of hernia on discharge.
Ether; on opening sac much reddish serum escaped; small intestine with difficulty returned; sac separated and removed, neck tied with silk; iodoform and salicylic wool dressings	41	C.	No sign of hernia on discharge.

*without Operation.
inal.*

Rest, &c.	12	R.	To come in again for radical cure.
Ice-bag, taxis	2	R.	
Taxis	2	R.	Went out with own truss.
Ice-bag, taxis, &c.	12	R.	Supplied with a truss.
" "	2	R.	
Ice-bag, Lot. Sodæ Chlor.	23	R.	Very large hernia; penis invisible. Abscess of scrotum caused by pressure of inefficient truss.
Taxis, &c.	2	R.	To have a truss.
Ice-bag, &c.	11	R.	To have a truss.
" "	6	R.	To have a truss.
Rest, &c.	3	R.	Went with his own truss.
Ice-bag, taxis	3	R.	Supplied with a truss.
Ice-bag	45	R.	Supplied with a truss. Patient remained in hospital on account of a hard round lump (? omental), which failed at first to yield to treatment; it was situated opposite the external ring

oral.

Ice-bag, &c.	29	R.	Refused operation. Had an umbilical hernia as well. Truss and abdominal belt supplied.
"	17	R.	Went with a truss.

lical.

Ice-bag, &c.	13	R.	Came from medical side. Fitted with an abdominal belt.
Ice-bag, taxis	4	R.	Supplied with a truss. Some symptoms of "obstruction" on admission.
Ice-bag	12	R.	Belt ordered.
Rest, &c.	8	R.	Gastric symptoms. Transferred to medical ward.

SPECIAL TABLE II.—*Erysipelas (arising in hospital).*

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration of residence in hospital before attack.	Probable cause of attack.	Month.	Part where eruption appeared.	Interval between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
1	F.	31	Mammary abscess	Alexandra	15 days	Incision wounds not healed	Jan.	Wound	12 days after operation	10 days	C.	Onset of attack severe. Temp. 105°-6°, but symptoms rapidly subsided.
2	M.	10	Necrosis of femur	Edward	85 "	Open wound	"	"	—	6 "	C.	
3	M.	10	Glandular abscess of groin	Clayton	3 "	? Examination	"	"	2 days	4 "	C.	
4	F.	59	Carbuncle	Alexandra	10 "	Septic wound	"	"	8 "	12 "	C.	Leg in plaster of Paris. One small superficial wound.
5	M.	34	Compound fracture of tibia and fibula	Albert	142 "	? Examination	"	"	—	15 "	C.	P.M.—Rectum opens externally by an artificial slit; large slough on sacrum; kidneys very large; cortex much swollen, studded with pink round dots; on section, innumerable minute white dots thickly disseminated through the cortex and medulla. Abnormal arrangement of aortic arch and chief aortic branches; heart imperfect; harelip and cleft palate; 6 toes on right foot.
6	F.	2 days	Imperforate anus	Victoria	6 "	Operation	Feb.	"	6 "	7 "	D.	Not transferred to No. 8.
7	M.	62	Carcinoma of rectum	Edward	4 "	? Examination	"	"	2 "	5 "	D.	No P.M. Thrombosis right femoral vein. ? Pyæmia.
8	M.	49	Caries of tarsus	Albert	168 "	Amputation of leg	"	"	1 "	5 "	C.	

9	F.	36	Pelvic cellulitis, mis-taken for malignant disease	Elizabeth	3 mos.	Colotomy wound	"	"	41	20	C.	Subsequently the colotomy wound was closed by a plastic operation.
10	F.	55	Scirrhus of breast	"	20 days	Amputation	Mar.	"	10	18	C.	25 days after operation, and 15 days after commencement of attack of erysipelas, considerable hæmorrhage occurred. The bleeding point was secured by the house surgeon.
11	F.	15	Varicose internal saphena (left)	Alexandra	25 "	Operation	"	"	11	18	C.	Patient very ill; septicæmia.
12	M.	24	Fracture of fibula; rupture of anterior tibial vessels	Leopold	6 "	Amputation of leg	April	Wound and elbow	10	3	C.	See Special Table III.—Pyæmia. Not transferred to No. 8.
13	F.	58	Scirrhus of left mamma	Alexandra	14 "	Amputation of breast	"	Wound	4	10	C.	
14	F.	7	Arthritis of hip	Victoria	20 1/2 "	Open wound	"	"	—	7	C.	
15	M.	20	Caries of os calcis	Edward	14 "	? Examination	"	"	10	10	C.	
16	F.	1 1/2	Arthritis of knee	Victoria	122 "	? Examination of sinus	"	"	2	5	C.	Limb was fixed in plaster of Paris with a window.
17	M.	15	Glandular axillary abscess	Albert	7 "	Incision	"	"	3	7	C.	
18	M.	9	Acute periostitis of radius	Edward	30 "	Open wound	"	"	—	10	C.	
19	M.	41	Lacerated wound of leg	"	3 "	? Examination	"	"	3	13	C.	Severe laceration by a wheel of a railway carriage; bones not fractured; healed completely after grafting.
20	M.	67	Epithelioma of nose	Albert	16 "	Operation	May	"	8	15	C.	
21	M.	63	Scalp wound	"	6 "	Open wound	"	"	6	6	C.	
22	M.	16	Glandular abscess of neck	"	25 "	"	"	"	7	10	C.	
23	M.	36	Ischio-rectal abscess	Edward	14 "	"	"	"	—	4	C.	
24	M.	62	Scald of hands	Albert	4 "	"	June	"	3	4	C.	
25	F.	54	Scalp wound	Elizabeth	2 "	"	July	"	2	4	C.	
26	M.	45	Caries of tibia	Albert	5 "	Operation	"	"	2	22	C.	Limb afterwards amputated for disease of knee.
27	F.	40	Scirrhus mammae	Alexandra	27 "	? Examination	t.	"	—	6	C.	Attack commenced 21 days after operation.

SPECIAL TABLE II.—*Erysipelas (arising in hospital)*—continued.

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration of residence in hospital before attack.	Probable cause of attack.	Month.	Part where eruption appeared.	Interval between action of cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
28	F.	36	Bursitis	Alexandra	2 days	Open wound	Sept.	Wound	2 days	3 days	C.	Not transferred; treated in
29	M.	18	Enchondroma of hand	Edward	6 "	Operation	"	"	3 "	6 "	C.	Edward small ward.
30	M.	17	Osteoid sarcoma of tibia	Clayton	14 "	Amputation	Oct.	"	2 "	20 "	C.	Not transferred; treated in Clayton small ward.
31	M.	68	Scalp wound	Edward	2 "	Open wound	"	"	—	4 "	C.	Attack occurred 11 days after operation.
32	M.	29	Varicose veins	Clayton	14 "	"	"	"	—	5 "	C.	P.M.—Knee-joint full of pus; cartilage partly disappeared; crucial ligaments softened; viscera soft, and in the condition which is the result of an acute febrile process; in the anterior wall of the vagina was a thick walled cyst, 4 inches long, with purulent contents. ? Pyemia.
33	F.	50	Eczema of leg, &c. arthritis of knee, &c. (following phlebitis)	Alexandra	23 "	"	"	"	—	1st, 9 days, 2nd, 25 days	D.	First attack 9 days after operation.
34	F.	44	Scirrhus mammae	Elizabeth	16 "	"	"	"	8 "	1st, 5 days, 2nd, 5 days	C.	Partial sloughing of heel flap.
35	M.	53	Caries of tarsus	Leopold	20 "	Syme's amputation	Nov.	Wound and thigh	6 "	17 "	C.	Attack occurred 9 days after operation.
36	M.	31	Epithelioma of floor of mouth	Edward	20 "	Operation	"	Face	9 "	10 "	C.	Patient removed from hospital by mother on day of attack.
37	M.	56	Lipoma	"	25 "	"	"	Wound	2 "	17 "	C.	
38	M.	1	Fractured femur	Victoria	45 "	Splint wound	"	"	—	—	—	

39	F.	23	Glandular cervical abscess	Alexandra	3	Operation	"	"	2	7	C.	Left hospital with advanced lardaceous disease.
40	M.	9	Psoas abscess	Leopold	5	Open wound	"	"	3	6	C.	
41	M.	63	Epithelioma of cheek	Edward	13	Operation	"	"	5	3	C.	
42	F.	67	Carcinoma mammæ	Elizabeth	10	"	"	"	5	10	D.	P.M.—No secondary growths in internal organs; aortic and mitral disease; viscera soft, congested, &c., indicating previous exposure to high fever. See Special Table III.
43	M.	35	Compound fracture tibia and fibula	Edward	44	? Examination	"	"	—	5	C.	Leg in antiseptics and plaster.
44	F.	26	Ankylosis of elbow	Elizabeth	35	Excision	"	"	5	6	C.	
45	F.	55	Scirrhus mammæ	"	12	Amputation	"	"	9	14	C.	
46	M.	6	Lacerated wound into ankle	Clayton	11	? Examination	"	"	—	14	C.	Not transferred; treated in Clayton small ward.
47	M.	33	Cellulitis of hand and forearm	Edward	46	"	Dec.	"	—	14	C.	
48	M.	41	Scalp wound	Clayton	2	Open wound	"	"	2	10	C.	
49	M.	30	Wound of thigh	Albert	4	? Examination	"	"	4	9	C.	
50	M.	43	Bursitis	"	2	"	"	"	—	7	C.	
51	M.	33	Crushed fingers; cellulitis of forearm	"	1	"	"	"	2	10	C.	Not transferred; treated in Albert.

This Table includes *all* the cases of erysipelas arising in the surgical wards during the year 1887. A few of the cases may perhaps be looked upon as having been infected before admission, as the disease arose within 2 or 3 days of their entering the wards. Ten cases (Nos. 30 and 43—51) were still in the hospital at the close of the year. Four patients left the hospital during the year who were transferred to No. 8 Block for erysipelas during November and December, 1886, and are not included in the Table.

The above Table shows 15 cases in No. 3 Block, Alexandra 8, Elizabeth 7.

4 " " No. 4 " Victoria 4.

11 " " No. 6 " Albert 11.

21 " " No. 7 " Edward 13, Leopold 3, Clayton 5.

The month in which the greatest number of cases arose was November (= 12). In August no cases occurred.

The number of cases per month is as follows:—January 5, February 4, March 2, April 8, May 4, June 1, July 2, August 0, September 3, October 5, November 12, December 5.

From the surgical wards there were also transferred during the year 14 cases of scarlet fever, 5 cases of diphtheria, 5 cases of varicella, 1 case of measles, 1 case of rōtheln, and 1 case supposed typhus.

SPECIAL TABLE III.—PYÆMIA.

CLASS I. *Admitted as such.*

Acute pyæmia—

Fatal cases—

Acute peritonitis from perforation; effusion into left knee-joint.—Male, æt. 63. Patient was stated to have been ill for 2 weeks. On admission he was moribund. Temp. 95°. Abdomen distended, and left knee-joint full of fluid. Large bedsore over sacrum. Died in a few hours. P.M.—Body emaciated. Abdomen distended, partly by gas and partly by purulent and peasoup-like fluid. Coils of intestine glued together by thick yellow lymph. There was a rent in the lower end of the sigmoid flexure, allowing of extravasation. Ulceration of large intestine (tubercular) in its whole length. Ulcers well defined and transverse, intervening mucous membrane healthy. No sign of tubercle in chest. Left knee-joint full of purulent fluid, synovial membrane injected, joint surfaces otherwise healthy. Other organs normal.

Malignant disease of rectum.—Male, æt. 62. The first symptoms of the disease were noticed nearly 3 years ago. On admission patient very feeble, temp. 102·4°. A sinus on right side of perineum near gluteal fold was discharging very offensive pus, and skin around was red. Fluctuation felt deeply. Growth reached by point of finger. No control over sphincter. The day following sinus was opened up and pus evacuated. Twenty-four hours afterwards right lower limb became greatly swollen from thrombosis (pyæmic?) of femoral and iliac? veins. An erysipelatous blush spread over the back on the fifth day, and he died on the ninth. Some cough and expectoration for a few days before death, but examination of chest only revealed bronchitic sounds, no dulness. A post-mortem was refused.

Fractured pelvis.—Male, æt. 13. Ten days before admission was crushed by a horse against a wall. When he entered the hospital temp. 102·8°. Right thigh flexed and everted, and any attempt to move it causes great pain. Abdomen a little distended, and tender at the lower part to pressure. Three days later the distension and tenderness had increased, and there was pain in the back of the neck and left wrist. Condition gradually became worse, temp. 103°, pulse 130. Consolidation at both bases. Tongue dry and brown. Albuminuria. Delirium, &c., and death took place on the tenth day. P.M.—No peritonitis. The disten-

sion was intestinal. Left pleural cavity contained a quart of sanious pus, right pleural cavity 1 pint of similar fluid. Left lung completely collapsed. Right lung presented numerous wedge-shaped abscesses abutting on the surface, also patches of pulmonary apoplexy. Kidneys: numerous minute abscesses in rows perpendicular to surface. Spleen large and soft. Liver fatty. A large collection of pus under muscles of left buttock. Large abscess also in pelvis on right side under peritoneum; this had extended upwards under sheath of psoas as high as kidney. Right hip-joint contained a little pus. There was a fracture through the acetabulum separating the ileum from the ischium and pubes along the normal line of union. Head of femur rough and bare, most of the cartilage had disappeared. Some effusion in right knee-joint, fluid turbid, not pure pus.

Chronic pyæmia—

Fatal case.—Wound of thumb with a fish-bone.—Female, æt. 42. Three months before admission patient pricked her thumb with a fish-bone. This was followed by swelling and great pain in the thumb and over the front of the wrist. Incisions were made, and the parts have suppurated ever since. Eight weeks ago an abscess formed, and was opened, in the left leg. When patient entered the hospital she was much emaciated, complexion sallow, and general condition very feeble. There were 2 large bedsores, and right calf was distended by a considerable collection of pus; this pus was at once evacuated. Patient remained in a very apathetic state, and on the thirteenth day another abscess had to be opened over the left hip, and a small one above the left knee; temperature hectic, varies from 97° to 101°. Gradually patient's strength failed, tongue became dry and brown, she refused food, and died on the thirty-third day. P.M.—Body much emaciated. Palm of right hand distended with pus; no bare bone discovered. Small incisions unhealed in thighs and legs, where abscesses had been opened. Large sacral bed sore, with bone exposed at its base; abscesses had formed by burrowing of pus all around it. Right pleura acutely inflamed, contained $\frac{3}{4}$ of a pint of purulent fluid. Both lungs contained several abscess cavities, sinuous in outline, having a smooth membrane lining them, and full of brownish-red, thick pus. They all abutted on the pleura. Kidneys normal in size, but containing numerous small abscess cavities in various regions. Spleen small and soft. Liver large and fatty. No amyloid changes anywhere. A small abscess was found between œsophagus and vertebral column opposite bifurcation of trachea; it was not connected with bone. No other abnormal conditions were discovered.

CLASS II. *Acute fatal bone cases.*

Acute infective periostitis of tibia.—Male, æt. 14. One month ago knocked his shin against a step; a week before admission complained of pain in the leg at night. Three days ago front of left leg became red and swollen, and there was also a swelling of the great toe on the same side. Pain was severe and affected the left shoulder and back as well as the swollen parts. When he entered the hospital temp. 103·6°; subperiosteal abscess over left tibia, and abscess of left big toe at once incised. Boy was thin and had a slight cough. The left knee-joint was slightly swollen. History of shivering and profuse sweating during last 3 nights.

The next day pain over right tibia was complained of, and patches of erythema over various parts of the body were noted. On the third day an abscess was noted and incised over the dorsum of the left foot, a bedsore began to form over sacrum, and he was troubled most by pain in the back. On the eighth day vomiting commenced and delirium set in, his condition became rapidly worse, and death occurred on the twelfth day. P.M.—Body much emaciated. Thin, unhealthy pus exuding from the various incisions. Front of left tibia as exposed through incision, bare and dead. Lobular pneumonia (pyæmic?) in lower lobes of both lungs. An abscess was found beneath the pleura on the left side in neighbourhood of, and in connection with, the second, third, fourth, fifth, and sixth vertebræ. The left side of the anterior surface of these vertebræ is eroded; the abscess contained about an ounce of pus. Œsophagus and stomach greatly distended with fluid, foul-smelling, yellow, and glairy. The stomach contained more than 2 pints and a half. Nothing further abnormal discovered. (The infection of the tibia was probably secondary to the spinal disease; the injury to the tibia might be looked upon as producing a “weak spot” or “suitable soil” in which the infective agent or agents could multiply.)

Probably an acute infective bone case.—Male, æt. 12. Four days before admission tumbled over some railings. The same evening had pain in the left hip; this continued for the next 3 days, when he became much worse, and refused food. When first seen it was noticed that he was very thin, skin sallow, temp. 103°, much pain in left hip and thigh. The same night he was delirious, and vomited some greenish matter, and next morning the vomiting continued, he coughed up once a little blood, was very restless, and some pustules appeared over back and front of trunk; temp. 101·8°, pulse 130. He died suddenly at 11 a.m. P.M.—On surface of trunk were numerous small, round, slate-coloured maculæ, also a few small vesicular or pustular-looking points, some of which were hæmorrhagic. Recent pleurisy on both sides, shown by patches of lymph. Recent pericarditis, some lymph over apex of heart and back of left ventricle. Heart: much clot on right side, numerous recent hæmorrhages on the outer surface and also beneath the endocardium. Lungs: on surfaces of both organs were numerous small, wedge-shaped, congested areas, a few of which were decolourised in the centre, but none purulent. There were several large wedge-shaped recent hæmorrhages in the lower lobes. Kidneys, liver, and spleen “cloudy swelling.” Brain normal. There was a little turbid? synovia in left hip, but nothing else abnormal, the epiphysis was quite healthy. An extensive search for the primary seat of the infection was instituted, but no bone mischief or other cause was discovered.

CLASS III. *Arising in hospital.*

Non-fatal case—

Fracture of fibula; rupture of anterior tibial vessels.—Male, æt. 24. Wheel of van passed over foot, and in drawing it away a blow was received on the upper and outer part of the leg. On admission, quarter of an hour afterwards, much swelling and discolouration of upper third of leg. The swelling gradually increased, and constitutional signs of hæmorrhage showed themselves. Amputation below knee decided upon. Temp. 96°. The upper part of the fibula was

found to be broken and the anterior tibial artery ruptured. A few days later rigors, sweating, diarrhœa, delirium, &c., set in, the thermometer registering on one occasion 107°. The flaps sloughed and pus burrowed in the neighbourhood of the stump. The acute pyæmic state gave way to a chronic condition, in which pus collected in the elbow and shoulder-joint and in the opposite calf. For some time he was in the Erysipelas Ward. As soon as convalescence allowed the uncovered end of the tibia was resected, but this proving unsatisfactory amputation of thigh was done. Before being discharged on the 258th day the general health was quite re-established, and passive motion was being applied to the elbow, which had been irrigated during the illness for purulent effusion. The thigh stump was quite healed.

Fatal cases—

Operation for varicose vein.—Male, æt. 18. On admission patient said he had been rejected for the army because of an enlarged vein in the right leg. *Operation.*—Spray and all antiseptic precautions. Sponges were used. Patellar branch of internal saphena vein excised, ends ligatured with catgut. Dressing, iodoform gauze and salicylic wool. The next day patient complained of pain in the wound, and temp. 101·8°. On the fourth day after the operation lymphangitis set in, the wound was excessively tender, and the temperature rose to 105·6°, with a rigor and profuse perspiration. State rapidly grew worse, temperature remained continuously high, rigors and sweating, delirium, vomiting, and patches of erythema over trunk, &c. Death occurred on the tenth day after the operation. P.M.—Right saphena vein empty. Inguinal glands much swollen. Heart almost free from clot; endocardium much stained. Lungs: right lower lobe presented 5 infarcts, 2 of which were becoming decolourised; they were all abutting on the diaphragmatic surface, and there was a layer of recent lymph on the surface of each infarct. Liver, spleen, and kidneys large, soft, “cloudy swelling.” All the organs were in the condition which indicates a previous exposure to high fever.

Wound of knee-joint.—Female, æt. 8. Patient, whilst running, fell down and cut her knee, the latter coming against the sharp edge of a broken earthenware cup. The wound bled freely; this was arrested, and she was brought to the hospital. On admission a transverse cut, 1½ inches long, was found below the patella. The synovial membrane was sutured and then the skin wound under the spray. The joint was not irrigated. The knee soon became swollen and painful. Temp. 101·6°, and pus oozed from the wound and was probably filling the joint cavity. On the sixth day lateral incisions were made, the joint washed out, and a drainage-tube carried across the articulation. A week later the knee became more painful, the discharge was considerable, and pain in the neck and left elbow very troublesome. Temperature too was continuously high, the thermometer registering frequently above 104°. Some pus was evacuated from elbow a few days afterwards, but the child was now very ill and rapidly grew worse. Constant high fever and delirium, picking at bedclothes; pulse almost imperceptible; appears in much pain, cries out loudly if moved, &c. Death occurred on the twenty-second day. P.M.—Left knee-joint had been opened. Synovial membrane dull and opaque. Crucial ligaments softened. Surface of bone covered with cartilage unaltered. Same report with regard to left elbow. There was a layer of recent lymph at the base of the brain covering the cerebellum, pons, crura,

optic chiasma, tract, and nerves. No tubercles. No lymph on vertex; some in lateral ventricles, having passed in by the transverse fissure. All the other organs were healthy.

STATISTICAL REPORT
OF
THE OPHTHALMIC DEPARTMENT
FOR THE YEAR 1887.

BY G. WINGFIELD ROLL AND J. S. HINNELL,
LATE OPHTHALMIC CLINICAL ASSISTANTS.

DURING the year there were 3702 new out-patients (exclusive of renewed letters). 242 in-patients were admitted (exclusive of re-admissions), and 246 major operations were performed.

Table of In-patients.

Congenital ptosis 2	Lost eyes 14
Dermoid cyst of brow 1	Conical cornea 3
Nævus of brow 1	Fistula corneæ 1
Foreign body in cheek 1	Burn of cornea 1
Wound of lid 1	Corneal ulcers, acute 21
Lacrimal abscess and mucocele 7	" chronic 9
Dermoid cyst of conjunctiva 2	Nebula and leucoma 4
Wound of conjunctiva 1	Keratitis, heredito-syphilitic 12
Pterygium 1	Bullous keratitis 1
Lupus of conjunctiva 1	Kerato-iritis 2
"Pemphigus" of conjunctiva	Foreign body in sclera 1
(primary shrinking) 1	Episcleritis 1
Purulent ophthalmia 4	Sclero-keratitis 1
Trachoma and pannus 6	Iritis, in acquired syphilis 2
Trichiasis, entropion, ectropion 7	" serous 2
Orbital abscess 1	" relapsing 1
Intra-orbital tumour 2	" traumatic 1
Myopia 1	Displaced pupil 1
Divergent strabismus 7	Irido-choroiditis 1
Convergent strabismus 6	Glaucoma, acute 1
Wound of globe 18	" subacute 2

Glaucoma, chronic	7	Detached retina	2
" secondary	6	Retinitis, syphilitic	3
" absolute	1	" pigmentosa	1
" traumatic	1	Choroido-retinitis, syphilitic	1
" juvenile	1	Optic papillitis	5
Cataract, lamellar	5	Post-papillitic atrophy	1
" soft	1	Progressive atrophy	5
" senile	28	Tobacco amblyopia	1
" concussion	1	Nyctalopia	1
" secondary	1	Erythropsia	1
" traumatic	2	Intra-ocular sarcoma	1
Membrane after extraction	9	Malingering	1
Hyalitis	1		—
Choroiditis	2		242

The following is a list of the chief operations performed :

(The figures refer to the number of eyes.)

Removal of cataract	40	Tenotomy of external rectus	12
By extraction	33	Tenotomy of internal rectus	28
" suction	3	Graefe's operation	6
" curette evacuation	4	Snellen's "	1
Dissection after extraction	23	Liebreich's "	6
Iridectomy	53	Moorfields "	2
For glaucoma, acute	2	Not noted	13
" " subacute	3	Advancement of internal rectus	4
" " chronic	10	" external rectus	2
" " secondary	6	Removal of dermoid tumour of	
" " absolute	1	conjunctiva	2
" " juvenile	2	For lupus of conjunctiva	1
Preliminary to cataract		For pterygium	2
extraction	3	Transplantation for "primary	
For prolapse of iris	9	shrinking "	1
" perforating ulcer	2	Plastic operation for symblepharon	1
" iritis	1	Peritomy	1
" anterior synechia	1	For entropion	5
" artificial pupil	11	Snellen's operation	4
" fistula corneæ	1	Arlt's "	1
Iridotomy	1	For ectropion	1
Sclerotomy	1	Electrolytic epilation	1
Removal of foreign body from		Extirpation of lacrimal sac	2
sclera	1	For congenital ptosis	3
For conical cornea	3	Panas's operation	1
Saemisch's section	3	Plastic "	2
Cauterisation of cornea	12	Removal of rodent ulcer	1

For nævus of lid	1	Trephining frontal sinus	2
Removal of dermoid cyst of brow	2	Excision of eyeball	36
„ foreign body from			—
check	1		246

Analysis of Cataract Operations.

I.—Extraction of hard cataract—32.

The section was made upwards in every case, except No. 5. In this case, which was one of old plastic iritis, a previous iridectomy downwards was made use of by making the incision downwards.

Iridectomy was done at the time of the operation, except in Nos. 2, 4, 5, 6, 7, 26, in which it had been done previously.

Cocain—a 2 per cent. solution of the hydrochlorate—was used in all but one case. It was always freshly made on the day of the operation.

In one case a general anæsthetic, ether, was employed.

Atropine was commenced on the third day, and used twice daily until about the fourteenth day; more frequently when iritis occurred.

In Nos. 20 and 22 the lens was extracted in its capsule.

II.—Operations for removal of soft cataract—7.

In four cases the lens was extracted with the curette; in three cases with Bowman's syringe.

TABLE I.—*Extractions of Hard Cataract—32.*
Mr. Nettleship's Cases (22).

Page in B. 87.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation	Result.
12	1	F. F. Jan. 28th	M.	68	Cocain	Left; extraction up; much soft matter pressed out after nucleus; pupil left clear. Preliminary iridectomy six months previously	Favorable	April 5th— Needled	April 20th— $\frac{6}{18}$, 1 J.
10	2	J. S. Feb. 18th	M.	46	"	Left; extraction up with iridectomy; lens quite soft and sticky; some lens matter left. A traumatic cataract	Favorable	None	Membrane in pupil; will require needling.
23	3	J. P. Feb. 25th	F.	65	"	Right; extraction up with iridectomy; lens brown, small, and horny, a little sticky matter left	Favorable	None	Not known.
31	4	W. D. March 11th	M.	66	"	Left; extraction up; soft matter coaxed out; pupil left black. Preliminary iridectomy three months previously	Favorable	May 20th— Needled	Oct. 7th— $\frac{6}{32}$ partly, 1 J. slowly.
35	5	M. J. R. March 25th	F.	37	"	Left; extraction down, an old iridectomy being made use of, which proved too small; lens matter semi-solid, came away piecemeal, a sharp hook being used; lens apparently completely removed. A case of old plastic iritis	Chronic iritis	Seven weeks later iridectomy up	Operated on for appearance.
63	6	C. J. May 31st	F.	65	"	Left; extraction up with iridectomy; lens escaped entire; a little hæmorrhage into anterior chamber	Favorable	June 24th— Needled	July 1st— $\frac{6}{24}$, 6 J. readily.

67	7	J. N. June 10th	F. 65	"	Left; extraction up with iridectomy; lens shot out abruptly; some hæmorrhage; much blinking	Favorable	October 7th— Needed	Nov. 3rd— $\frac{6}{18}$, 1 J.
77	8	W. L. July 1st	M. 76	"	Left; extraction up with iridectomy; amber-coloured lens, uniformly hard, came out clean	Favorable	July 15th— Needed. The right eye, the lens of which had been extracted elsewhere, was needled at the same time; troublesome iritis occurred in it	$\frac{6}{30}$, 6 J. slowly.
84	9	J. P. July 19th	M. 56	"	Right; extraction up with iridectomy; iris cut with knife; free bleeding; lens came out easily; there was a gap at its upper part	Favorable	None	Sept. 6th— $\frac{6}{34}$ partly, 1 J. fairly.
50	10	D. T. July 22nd	F. 68	"	Right; extraction up; lens only half opaque; clear lens matter coaxed out afterwards, probably some left. Iridectomy up two months previously. A case of chronic glaucoma with cataract	Striped keratitis	None	Pupil full of opaque matter. Bare p. l.
91	11	M. A. T. July 22nd	F. 68	"	Left; extraction up with iridectomy; much soft matter removed by pressure through lid	Favorable	None	Sept. 13th—Some membrane in pupil. $\frac{6}{24}$ partly, 6 J.
98	12	W. M. Aug. 26th	M. 62	"	Right; extraction up with iridectomy; small coloboma; pupil clear	Favorable	None	Sept. 15th— $\frac{6}{12}$ badly, 1 J.
117	13	J. S. Sept. 9th	M. 64	"	Left; extraction up with iridectomy; much vitreous lost after iridectomy, and before any pressure was used	Favorable	None	Oct. 28th— $\frac{6}{28}$, 1 J. Astigmatism=1 D.

Page in B. 87.	Report No.	Name and date.	Sex.	Si.	Anæsthetic	Operation.	Progress of case.	Secondary operation.	Result.
118	14	W. P. Sept. 9th	M.	70	Cocain	Left; extraction up with iridectomy; coloboma small and up-out	Favorable	None	Oct. 14th— $\frac{6}{35}$, 6 J. Opaque matter in pupil.
125	15	E. C. Oct. 4th	M.	56	"	Left; extraction up with iridectomy; iris caught during incision; much soft matter left; he behaved badly	Exposed his eye, and had considerable congestion	None	Oct. 28th—Less than $\frac{6}{20}$, 20 J.
67	16	J. N. Oct. 1	F.	65	"	Right; extraction up with iridectomy; incision rather short and far back; behaved well	Favorable	None	Nov. 11th— $\frac{6}{13}$ partly, 1 J. fairly.
129	17	M. H. Oct. 18th	M.	69	"	Right; extraction up with iridectomy; cataract Mongagnian; "acid drop" nucleus extracted with a jerk by finger pressure on lid; the speculum being taken out after the cystotomy; no vitreous lost; behaved well	Favorable	None	Nov. 8th— $\frac{6}{13}$ partly, 8 J.
46	18	M. M. Nov. 4th	F.	62	"	Right; extraction up; much bleeding. Preliminary iridectomy five months previously	Prolonged congestions, but no iritis	Jan. 10th, 1888—Needled 1888	Jan. 25th, 1888— $\frac{6}{30}$, 6 J. slowly.
138	19	E. G. Nov. 11th	F.	54	"	Left; extraction up with iridectomy; much soft matter easily coaxed out	Favorable	None	April 10th, 1888— $\frac{6}{15}$, 1 J.
147	20	P. L. Nov. 25th	M.	65	"	Left; extraction up, in capsule, with iridectomy; slight oozing of vitreous after the extraction; lens over-ripe	Favorable	None	Death from strangulated hernia three weeks after extraction of left.
147	21	P. L. Dec. 13th	M.	65	"	Right; extraction up with iridectomy	Favorable	None	Not known.
153	22	M. L. Dec. 9th	F.	62	"	Right; extraction up, in capsule, with iridectomy; some vitreous; too fluid, escaped	Iritis, with displacement of pupil upwards	March 20th, 1888—Division of membrane	

Mr. Lawford's Cases (10).

3	23	W. E. Jan. 25th	M. 63	"	Right; extraction up with iridectomy; nucleus escaped spontaneously; vitreous presented, none escaped; much soft matter left	Iris healed in wound at outer part; relapsing iritis; sympathetic inflammation of left in April	May 17th— Excised	Lost.
5	24	C. P. Feb. 1st	F. 52	"	Left; extraction up with iridectomy; uncomplicated	Suppuration commencing at wound on eighth day	Ant. chamber washed out with Hyd. Perchl. lotion, 1 in 3000; galvano-cautery to edges of wound. March 11th— Excised	Lost.
7	25	W. H. C. Feb. 3rd	M. 74	"	Left; extraction up; hard nucleus; most of soft opaque cortex coaxed out. Preliminary iridectomy six months previously	Favorable	None	May 9th, 1888— $\frac{6}{0}$, 1 J. Astigmatism = 0.5 D.
14	26	E. H. April 19th	F. 66	"	Right; extraction up with iridectomy; patient started when iris picked up, free bleeding; lens came out fairly clean	Favorable	None	May 17th, 1887— $\frac{6}{1\frac{1}{2}}$, 6 J.
16	27	M. S. April 19th	M. 54	"	Left; extraction up with iridectomy; small quantity of grey matter left	Moderate iritis and conjunctivitis	None	July 7th— $\frac{6}{1\frac{1}{2}}$ partly, 1 J. Astigmatism = 1 D.
20	28	J. B. April 19th	M. 46	"	Left; extraction up with iridectomy; section short and entirely corneal; capsule pulled out by sharp hook; lens over-ripe. History of blow ten years ago, with gradual failure of vision since	Moderate iritis	None	Oct. 12th— $\frac{6}{1\frac{1}{2}}$, 2 J. A poor scholar.

Page in B. 87.	Report	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
30	29	W. F. July 1st	M.	70	Cocain	Left; extraction up with iridectomy; iris prolapsed in front of knife and was partly cut; vitreous presented; no soft matter removed	Favorable	None	July 15th— $\frac{6}{32}$, 4 J. Astigmatism=1 D. Aug. 17th— $\frac{6}{32}$ partly, 1 J. No astigmatism.
57	30	E. H. Sept. 30th	F.	40	"	Right; extraction up with iridectomy; iris caught on knife and a piece cut off, which was subsequently removed. Pupil seemed quite clear	Favorable, except for troublesome neuralgia of right side of face	None	April 2nd, 1888— $\frac{6}{36}$, 1 J.
64	31	J. S. Nov. 22nd	F.	30	Ether	Right; extraction up with iridectomy; nucleus came out spontaneously without cystotomy. Needling had been done four days previously, with no result	Favorable	None	Dec. 2nd.—Sees large objects. Very extensive choroidal disease disclosed.
70	32	C. N. Dec. 6th	M.	66	Cocain	Left; extraction up with iridectomy; iridectomy ragged, a second piece removed; free bleeding; lens came out fairly clear	Favorable	None	Dec. 28th— $\frac{6}{18}$, 1 J. Astigmatism=1 D.
89	33	T. O'C. July 21st	M.	30	Cocain	Left; incision up with Taylor's knife; most of lens matter let out, containing grains of gunpowder; two grains were each contained in a piece of lens matter harder than the rest. Case in which lens was injured in a gunpowder explosion	Troublesome irritation, due to grains of powder in conjunctiva and sclerotic, which resisted several attempts at removal	None	Vision not tested, but eye quiet and apparently good.

TABLE II.—Operations for Removal of Soft Cataract—7.
Mr. Nettleship's Case (1).

Mr. Lawford's Cases (6).

9	34	F. H. March 15th	M.	4	Chloroform	Left; suction; needled four days previously	Favorable	None	Apparently good. Too young to test vision.
15	35	A. E. April 22nd	M.	6	Cocain	Right; suction; needled seven days previously	Favorable	None	Much opaque matter left. Will require needling.
9	36	F. H. May 3rd	M.	4	Ether	Right; small corneal incision; lens matter evacuated; nearly all removed; needled five days previously	Favorable	None	Counts figures at 20 ft. Too young to test accurately.
34	37	M. A. F. June 27th	F.	9	"	Right; suction; needled three days previously	Favorable	None	Jan. 2nd, 1888— $\frac{6}{12}$, I. J.
34	38	M. A. F. Sept. 17th	F.	9	Cocain	Left; incision out with Taylor's knife; some lens matter let out with curette, it was sticky, and not much came out; needled one day previously	Favorable	None	Jan. 2nd, 1888— $\frac{6}{12}$, I. J.
59	39	E. M. W. Oct. 7th	F.	7	Chloroform	Left; incision out; some lens matter let out; a bead of vitreous escaped; needled seven days previously, and again three days previously	Favorable	None	Good result. Tests unreliable; patient weak mentally.

PRINTED BY
ADLARD AND SON, BARTHOLOMEW CLOSE.

St. Thomas's Hospital
MEDICAL SCHOOL.

CALENDAR
AND
PROSPECTUS

FOR THE
YEAR COMMENCING OCTOBER 1st, 1888.



1888 & 1889.

LONDON:

PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,
STAMFORD STREET AND CHARING CROSS.

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Full information on all matters connected with the Medical School, Prizes, Scholarships, &c., will be obtained on application to the Medical Secretary, Mr. G. RENDLE, at the Hospital, Albert Embankment, S.E.

A Register of Lodgings suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared with a view to the convenience of gentlemen newly arriving in town without definite arrangements having been made for their accommodation in lodgings or otherwise.

Medical Practitioners, Clergymen, and Private Families residing in the neighbourhood receive Students for residence and supervision.

There is a Students' Club in the Medical School where Members can take their meals at moderate charges.

St. Thomas's Hospital

MEDICAL SCHOOL.

The WINTER SESSION 1888 - 89 will commence on MONDAY, OCTOBER 1st, and terminate on MARCH 31st.

The SUMMER SESSION will begin on MAY 1st, and terminate on JULY 31st.

An Introductory Address will be given in one of the Theatres of the Hospital by

C. J. CULLINGWORTH, M.D., F.R.C.P.,

on MONDAY, October 1st, at 3 P.M., after which the various Departments of the Hospital and School will be thrown open in working order for the inspection of Visitors.

Refreshments will be provided in the Library.

The Annual Dinner, in which all former and present Students are invited to join, will take place the same evening in the Governors' Hall, at 6 for 6.30, T. B. CROSBY, M.D., F.R.C.S., in the Chair.

The Annual Distribution of Prizes will be made during the Summer Session.

THE first hospital of St. Thomas, within the precincts of the Priory of St. Mary Overie, being destroyed by fire in the year 1207, the prior and convent erected in the same year near the site of their house a temporary hospital. This building was in the emergency used for religious purposes; mass was said there until the priory was rebuilt. In 1228 Peter de Rupibus, Bishop of Winchester, built the Hospital of St. Mary or St. Thomas, Overie, on the opposite or eastern side of the highway, on land provided by Amicius, Archdeacon of Surrey, and dedicated it to St. Thomas the Martyr.

The following is a translation of the "charter" of 1228:—

"The Lord Peter's charter of indulgence for twenty days granted by him for this hospital.

"Peter, by the grace of God Bishop of Winchester, to

all the faithful in Christ in the diocese of Winchester, greeting. In Him who is the salvation of the faithful. As saith the Apostle, bodily discipline which consists in fasts, vigils, and other mortifications of the flesh, profiteth little, while piety availeth for all things, having the promise of the life which now is, and of that which is to come.

“Our Lord Jesus Christ among the works of piety enumerates, commends, and teaches us to fulfil six, as though more praiseworthy and more meritorious than the rest, saying, ‘I was an hungred, and ye gave Me to eat; I was thirsty, and ye gave Me to drink; I was a stranger, and ye took Me in; I was naked, and ye clothed Me; I was sick, and ye visited Me; in prison, and ye came to Me. To them that perform these works of piety He shall grant His blessing and the glory of His heavenly kingdom, saying, ‘Come, ye blessed of My Father, receive the kingdom which has been prepared for you from the beginning of the world.’ But to them that neglect and do not perform works of compassion He threatens His curse and the penalty of eternal fire, saying, ‘Go, ye cursed, into eternal fire, which has been prepared for the devil and his angels.’ It is therefore to be borne in mind, my dearest sons, and more deeply laid to heart, how needful and how conducive to the salvation of our souls it is to exercise more readily those works of piety whereby blessing is promised to us, and the felicity of eternal life is gained.

“Behold at Southwark an ancient hospital, built of old to entertain the poor, has been entirely reduced to cinders and ashes by a lamentable fire. Moreover, the place wherein the old hospital had been founded was less suitable, less appropriate for entertainment and habitation, both by reason of the straitness of the place, and by reason of the lack of water and of many other conveniences: according to the advice of us, and of wise men, it is transferred and transplanted to another more commodious site, where the air is more pure and calm, and the supply of waters more plentiful. But whereas this building of the new hospital calls for many and manifold outlays, and cannot be crowned

with its due consummation without the aid of the faithful, we request, advise, and earnestly exhort you all, and with a view to the remission of your sins enjoin you, according to your abilities, from the goods bestowed on you by God, to stretch forth the hand of pity to the building of this new hospital, and out of your feelings of charity to receive the messengers of the same hospital coming to you for the needs of the poor to be therein entertained, that for these and other works of piety you shall do, you may, after the course of this life, reap the reward of eternal felicity from Him who is the Recompenser of all good deeds, and the loving and compassionate God. Now we, by the mercy of God, and trusting in the merits of the glorious Virgin Mary, and the Apostles Peter and Paul, and St. Thomas the Martyr, and St. Swithin, to all the believers in Christ, who shall look with the eye of piety on the gifts of their alms—that is to say, having confessed, contrite in heart and truly penitent, we remit to such twenty days of the penance enjoined on them, and grant it to them to share in the prayers and benefactions made in the church of Winchester, and other churches erected by the grace of the Lord in the diocese of Winchester. Ever in the Lord; Farewell.”

The Bishop of Winchester or the Archbishop seems to have granted, in 1277, to the Brethren power to elect their own Master; in a visitation, 1323, they are ordered to follow the rule of St. Augustine—the rule of the parent house—in obedience, chastity, renunciation of individual property, and the Master to eat with the Brethren.

In 1417 the Master and Brethren formed a Court of themselves, and exercised authority within the precincts of the Hospital over persons regular or secular, and in cases civil or even criminal.

The Hospital, built in 1228, had by 1507 become dilapidated and insufficient; great efforts were then made to rebuild and enlarge it.

In the Duchy of Lancaster records there is “the Rentall of Thomas Becketts hospitall in Southwarke, of all the lands and tenements belonging to the hospitall.” It

contains the names of the tenants and the rents paid; it is without date, but from internal evidence must be early in the sixteenth century.

Within the precincts of the hospital was the renowned printing press of James Nycolson, who, in 1527, signed the contract for the painted windows of King's College, Cambridge, as "James Nycolson, of St. Thomas's Spytell in Southwark." The most remarkable issue from this press was the first English Bible printed in England, inscribed thus—"Imprynted in Southwarke in St. Thomas Hospitale by James Nycolson. Dedicated by M. Coverdale to the King 1537."

About this time there were a Master, Brethren, and three Lay Sisters; forty beds were made up for poor, infirm, and impotent people, who were supplied with victuals and firing.

In the year 1535, Henry VIII. was excommunicated by Pope Paul III., and, declaring himself head of the church, proceeded to dissolve the Catholic houses, whose large revenues went to the Crown. There seem to have been 645 monasteries and abbeys thus treated, twenty-eight of which had abbots with seats in Parliament, ninety colleges and free chapels, and 110 hospitals of various descriptions. It is certainly in favour of the sweeping change that so able and honest a man as Sir Richard Gresham, the Lord Mayor of London, should have put his hand to the following petition to the King:

"Most redowted, puyasant, and noble Prince * * * *—nere and within the cytie of London be iij hospitalls or spytells commonly called Seynt Georges Spytell, Seynt Barthilmews Spytell, and Seynt Thomas Spytell, and the new Abbey of Tower Hill, founded of good devotion by auncient fathers, and endowed with great possessions and rents only for the reliefe, comforte, and helping of the poore and impotent people lying in every street, offending every clene persone passing by the way with theyre fylthy and nasty savors. Wherefore may it please your merciful goodness, enclnyed to pytie and compassion, for the reliefe of Xts very images, created to his own similitude, to order by your high authoritie, as supreme head of this Church of England, or otherwise by your sage discretion, that your mayer of your cytie of London,

and his brethren the aldermen for the time being, shall and may from henceforth have the order, disposition, rule and governance both of all the lands, tenements, and revenues apperteynyng and belongyn to the said Hospitals, governors of them, and of the ministers which be or shall be withyn any of them, and then your grace shall facillie perceyve that where now a small number of Chanons, Priests, and Monkes be founde for theyr own profitt only, and not for the common utilitie of the realme, a great number of poore, needy, syke and indugent persones shall be refreshed, maynteyned, and comforted; and also healed and cured of their infermities frankly and freely by physicions, surgeons and potycaries, which shall have stipende and salarie only for that purpose; so that all impotent persones not able to labour shall be releved, and all sturdy beggars not willing to labour shall be punished.”

St. Thomas's Hospital being claimed by the King as Church property, was surrendered to him by Thomas Thirleby, the then master, on the 15th July, 1538. It was called St. Thomas à Becket's Spittil. Its yearly revenue was estimated at £266 17s. 6*d.*, and an annual pension of 5s. 8*d.* was payable by the master, and another of 2s. 1*d.* by the curate, to the Archdeacon of Surrey. Soon after the seizure, we find that the Citizens of London purchased of the Crown some of its landed estates, producing about £160 yearly. The want of the hospital thus destroyed was felt immediately. Wounded soldiers from the army in France, and the sick poor in general were without provision or help, and Henry proposed granting to the City the Mansion house of St. Bartholomew's, the dissolved house of Grey Friars adjoining, and the unoccupied fabric of St. Thomas's Hospital. The latter was intended by Henry to receive the name of the Hospital of the Holy Trinity, and to be allotted exclusively to lame, wounded, and diseased soldiers. The monastery of Grey Friars was to be for the education and maintenance of fatherless children and those of poor parents. The intentions of Henry were overtaken by death, but not before he had conferred upon the Citizens of London the Hospital of St Bartholomew's and also that of Bethlem for lunatics.

It is from the death of Henry that the connection of St. Thomas's Hospital with the city of London appears to begin. To meet the needs of the sick and destitute who had before depended on the charity of the religious houses, a Committee or Board of Inquiry was instituted by the Citizens, with the sanction of King Edward. About 2,100 souls were reported as fit recipients of relief, as fatherless children and invalids, or as "Idle rogues of both sexes who were levying contributions on public sympathy by feigned tales of sorrow." It was proposed to establish receptacles for each class in the unoccupied monastic buildings, and a pecuniary contribution was set on foot to complete the work. They bought the dissolved house of the Franciscans or Grey Friars near St. Bartholomew's Hospital, and also by charter from the King received a grant as follows: "That the said mayor, commonalty, and citizens, and their successors, may have and enjoy all the franchises, immunities, and privileges whatever, which any Archbishop of Canterbury, and which the said Charles late Duke of Suffolk, or any master, brethren, or sisters of the late Hospital of St. Thomas in Southwark aforesaid; or any Abbot of the said monastery of St. Saviour, Saint Mary Bermondsey, next Southwark aforesaid, or any prior and convent of the priory of St. Mary Overie, ever had or enjoyed, or which we hold or enjoy, or our most dear father Henry the VIIIth, late King of England, or had enjoyed, or ought to have, hold, and enjoy the same: and that none of our heirs or successors may intermeddle with this our grant."

The Greyfriars became Christ's Hospital, and the Southwark site the Hospital of the Holy Trinity or St. Thomas's. The Lord Mayor and certain citizens then met on the 6th of October, 1552, and constituted themselves by royal permission governors of the hospitals, and almoners of the money collected. The Hospital of the Holy Trinity they named, in compliment to Edward, the "King's Hospital," and ordained it to receive 260 "wounded soldiers, blind, maimed, sick, and helpless objects."

They also directed that 380 children should be received into Christ's Hospital.

To complete the scheme, the old palace of Bridewell, in Blackfriars, where the Emperor Charles V. had lodged in 1522, when on a visit to Henry VIII., and where subsequently Wolsey had lived, was granted to the City by Edward as a house of correction for dissolute persons and idle apprentices, and for the temporary maintenance of distressed vagrants.

Lastly, the lands lately belonging to the Palace of the Savoy were conferred jointly on the three foundations; and a month only before the end of Edward's short reign, he incorporated by a second charter bearing date the 6th of June, 1553, the Lord Mayor and commonalty of the City of London in succession as perpetual governors of Saint Bartholomew's, Christ's, Bridewell, and the king's Hospital (which last received the name of ST. THOMAS THE APOSTLE), and secured to them the possession of all the estates and revenues appertaining to them by previous deeds of gift. So were the royal hospitals founded.

In 1557 the laws were framed and printed under the name of "The Order of the Hospitalls of K. Henry the VIII. and K. Edward the VI., viz. St. Bartholomew's, Christ's, Bridewell, St. Thomas's. By the Maior, Cominaltie, and Citizens of London," &c.

Successive bequests and donations continued to augment the property of the charities, but during the reigns of Elizabeth, James I., Charles I., and the Protectorate, there appear few facts to note. In the abstract of the charter of confirmation granted to the City in 1663 by Charles II. on his restoration, we find the charter of Edward acknowledged and confirmed. The Great Fire of London in 1666 injured St. Thomas's in its revenues only; and a fire in Southwark anno 1676, ceased, "as if by divine interposition," at the Hospital, probably a strong and isolated block of building. Shortly after this, however, it was found necessary to rebuild the fabric, and in 1693 subscriptions were opened for this purpose. A long list of benefactions in this and the succeeding year, amounting in all to £37,769 3s., is given by Golding, who especially singles out Sir Robert Clayton for eulogium. The statue then erected to him, and still extant,

was originally dated 1701, but this was altered on his death to 1714. He was the founder of the old square in which it stood, replacing what Golding terms "a low swampy structure of the monastic order." In 1707, Mr. Guy, founder of the neighbouring hospital, erected three wards at his own charge. In 1717, the back block of buildings adjoining Guy's Hospital was added. With the exception of the two large blocks forming the Borough frontage, the north wing erected in 1833, and the south wing in 1839, the fabric seems to have remained unchanged until its purchase by the railway. In the centre of the front quadrangle stood the brass statue of King Edward, by Scheemakers, erected first in 1737, in pursuance of the will of Charles Joye, some time treasurer of the Hospital. It now stands in the grounds of the New Hospital.

It is a matter of more difficulty to trace the early history of the medical school in connection with the hospital. For the facts which follow we are indebted to the late R. G. Whitfield, Esq., who, from the long period during which his family had been associated with this foundation, was perhaps more qualified to speak than any other person.

The earliest mention in the hospital books of an apprentice is on December 31st, 1561. It is not until 1702 that a law is met with precluding pupils or surgeons from dissecting the dead body without permission from the treasurer.

In 1703 the grand committee resolved that no surgeon should have more than three "Cubbs," a term altered in 1758 to that of "Dressers." Besides these there were also apprentices to the surgeons of the hospital, and ordinary pupils. The first mention of lectures occurs soon after the appointment of Wm. Cheselden, in 1718. These he at first gave at his own house, but afterwards by permission in the hospital. They were on anatomy and surgery. In 1723 a regular registry was ordered to be kept by the apothecary, of pupils entering to surgical practice. In 1725, Guy's Hospital was opened for the reception of patients. In 1751 the assistant-physician was allowed to take two pupils for his own benefit. In 1768, an additional surgeon, Mr. Joseph Else, was elected to read lectures to the pupils.

The students of Guy's Hospital had by courtesy been allowed to attend the operations, and a similar favour admitted the St. Thomas's men to those at Guy's. But on the 8th November, 1768, it was formally resolved that the pupils of each hospital have the liberty of attending not only the operations, but surgical practice, and the money to be divided between the six surgeons and two apothecaries. Hence the appellation of the "United Hospital"; an amalgamation never extended beyond the surgical practice.

To Mr. Else is due the foundation of a regular anatomical school. Mr. Cline, who in 1781 was appointed to read lectures conjointly with Mr. Else, was mainly instrumental in bringing it to its greatest celebrity. At Mr. Else's death, Mr. Cline purchased the collection of preparations made by him and Mr. Girle, a former surgeon, which are now in the hospital museum, and became sole lecturer on anatomy. In 1788 he also became surgeon to the hospital. Mr., afterwards Sir Astley, Cooper was apprenticed to Mr. Cline in 1784, and before his election, as one of the surgeons to Guy's Hospital in 1800, was joint lecturer with his teacher on anatomy and surgery. They both added materially to the pathological museum.

In 1812 Mr. Henry Cline was elected surgeon to St. Thomas's Hospital on his father's resignation, and carried on the anatomical lectures conjointly with Astley Cooper. In 1813 a new anatomical theatre and museum were built, the hospital giving £3000 for the purpose, and the two lecturers £1000 each. In 1815 Mr. Benj. Travers, an apprentice of Astley Cooper's at Guy's, was elected surgeon, according to the established rule which gave the vacancy to the senior apprentice of either institution. Mr. Travers joined in the lectures, devoting his attention specially to ophthalmic surgery. In 1820 Mr. Joseph Henry Green was elected surgeon on the death of his cousin Mr. Hy. Cline, having been apprenticed to his uncle Mr. Cline in the year 1809. From 1820 to 1825 he lectured with Astley Cooper. At this period all the branches of medical study,—viz., medicine, chemistry, materia medica, midwifery, botany, and physiology

—were lectured on at Guy's Hospital, and no physician of St. Thomas's was allowed to share them.

In 1824 Sir A. Cooper resigned the surgical chair, and Mr. C. Aston Key, his apprentice and nephew by marriage, joined Mr. Green in the office. Mr. Frederick Tyrrell, standing in exactly the same relation to Cooper, received permission to lecture on diseases of the eye. In the following year Cooper showed signs of cerebral disturbance, and the family desired that his nephew, Mr. Bransby Cooper, should be his successor. But the claims of Mr. John Flint South were considered superior, and he was appointed. From this cause the "United Hospitals" were severed, and a complete school set up in both. The majority of the students clung to Guy's, where the prestige of the great Sir Astley was still strong; and St. Thomas's school began to sink. The establishment of the Aldersgate Street private school under Tyrrell and Lawrence materially aided in this declension, as did also the secession of Dr. Elliotson to the newly-established University College, and the foundation of a fresh school at King's College, where for a time the surgical lectures were given by Mr. Joseph Henry Green, although a surgeon of St. Thomas's.

Owing to the unprosperous state of affairs in 1842, the Governors came forward to reorganize the school, and the aid of Mr. R. D. Grainger, whose popularity had been established in the Webb Street private school, was obtained. Mr. Joseph H. Green also rejoined the school; and Dr. Marshall Hall, Dr. Hodgkin, Dr. Martin Barry, Dr. Gregory, and Mr. Benjamin Travers contributed to its efficiency. This state of affairs continued until 1858, when the Governors gave back the management, and its attendant risks, into the hands of the lecturers.

For some years it was maintained with difficulty, and much self-sacrifice on the part of the staff, during what may be termed a transitional period, in the hope, now realized, of its once more developing into an institution worthy of its old traditionary glories.

From its foundation down to the year 1862, the Hospital

occupied the original site near London Bridge, but in that year the property was sold for the extension of the railway accommodation, and the establishment temporarily removed to the Surrey Gardens, where it was carried on till the Summer of 1871. In 1868 the first stone of the new Hospital at Westminster Bridge was laid by the Queen, and the completed building was opened by Her Majesty in 1871. In September the patients were first admitted into the new Hospital, and the Medical School was opened on October the 2nd.

The original Hospital latterly contained 500 beds. The present building contains in all 572 beds. It consists of six blocks appropriated to the reception of patients; with one for the administrative and other offices, and one for the Medical School. The Ward blocks, though connected by corridors, stand apart, so as to afford free exposure in all directions. The Wards, with the exception of four which are placed on the ground floor, occupy the first, second, and third floors. Generally, each Ward affords accommodation for 28 beds, which are placed against the piers between the windows, so as to secure thorough ventilation. In a small Ward annexed to each larger Ward, there are two beds for cases requiring special care or treatment.

Of the whole accommodation of the Hospital, about 180 beds are appropriated to ordinary Medical cases, and 230 to ordinary Surgical cases. There are also special Wards for the reception of diseases peculiar to women; for diseases of the eye; for venereal affections; and for children under six years of age. In one of the blocks, separated from the rest of the establishment, there are Wards for infectious diseases.

The space provided for each bed in the ordinary Wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases, about 2,500 cubic feet.

The Out-patients' Department is extensive and well arranged, and every facility is afforded for the treatment of different forms of Medical and Surgical casualties and diseases.

During the twelve months ending December 31st, 1887, the number of patients admitted into the Hospital amounted

to 4,663. In the same period, 26,143 Out-patients have been treated, and in the Maternity department 1,981 women have been attended at their own homes. Casualties, to the number of 63,397 attendances, were treated during the same period.

The School buildings stand at the southern extremity of the Hospital, from which they are quite isolated. They contain ample accommodation for large classes of students.

The Museum is one of the most important in the metropolis. There is a large Reading Room and Library for the use of the pupils.

In addition to these are the various Lecture Rooms, the Dissecting Rooms, the Laboratories for Practical Physiology and for Practical Chemistry, and the Post-mortem Rooms.

The Committee of the "NIGHTINGALE FUND" have arrangements with the authorities of St. Thomas's for educating Women as Hospital Nurses. On the satisfactory completion of one year's training, they will be required to enter into service as Nurses in the Metropolitan or Provincial Hospitals or Infirmaries. A limited number of gentlewomen can be admitted under special agreements to this course of training, with a view to qualify themselves for superior appointments.

The Regulations as to the admission of Candidates may be obtained by writing to Henry Bonham-Carter, Esq., the Secretary of the Nightingale Fund, 5, Hyde Park Square, London, W.

Institutions requiring trained Superintendents or Nurses are requested to apply to the Secretary of the Nightingale Fund, or to Miss A. L. Pringle, the Matron of the Hospital, giving as long previous notice as possible of their requirements.

Women wishing to be trained should, whenever it is possible, make personal application to Miss Pringle, to be entered on the list of Candidates, for admission as vacancies occur.

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<i>Practical Chemistry</i>	Dr. BERNAYS.
<i>Practical and Manipulative Surgery</i>	{ Mr. MAC KELLAR, Mr. CLUTTON, and Mr. PITTS. Mr. REID, Mr. ANDERSON, Dr. TAYLOR, Mr. MAKINS. Dr. SHARKEY and Dr. HADDEN. Dr. COPEMAN. Mr. NETTLESHIP and Mr. LAWFORD. Mr. ANDERSON. Dr. F. SEMON. Mr. BALLANCE. Mr. C. E. TRUMAN. (Vacant.)
<i>Demonstrations in Anatomy</i>	{
<i>Demonstrations in Morbid Anatomy</i>	{
<i>Demonstrations in Morbid Histology</i>	{
<i>Demonstrations in Physiology</i>	{
<i>Demonstrations in Practical Physiology</i>	{
<i>Diseases of the Eye</i>	
<i>Diseases of the Skin</i>	
<i>Diseases of the Throat</i>	
<i>Diseases of the Ear</i>	
<i>Diseases of the Teeth</i>	

TIMES OF ATTENDANCE OF THE PHYSICIANS AND SURGEONS
IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. BRISTOWE	—	2	—	—	2	—
Dr. STONE	2	—	—	2	—	—
Dr. ORD	2	—	—	2	—	—
Dr. HARLEY	—	2	—	—	2	—
Dr. PAYNE .....(Hon.).....	2	—	—	—	2	—
Dr. CULLINGWORTH	—	2	—	—	2	—
Mr. SYDNEY JONES	—	2	—	—	2	—
Mr. CROFT	2	—	—	2	—	—
SIR WILLIAM MAC CORMAC ..	2	—	—	2	—	—
Mr. MAC KELLAR	—	2	—	—	2	—
Mr. NETTLESHIP	—	2	—	2	—	—

TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS AND
ASSISTANT-SURGEONS ON THE OUT-PATIENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. SHARKEY	1.30	—	—	1.30	—	—
Dr. GULLIVER	—	1.30	—	—	1.30	—
Dr. HADDEN	—	—	1.30	—	—	1.30
Dr. ACLAND	—	1.30	—	1.30	—	—
Dr. CORY (Women and Children)..	—	—	1.30	—	—	1.30
Mr. CLUTTON	—	1.30	—	—	1.30	—
Mr. ANDERSON	1.30	—	—	1.30	—	—
Mr. PITTS	—	—	1.30	—	—	1.30
Mr. MAKINS	1.30	1.30	—	—	—	—

TIMES OF ATTENDANCE IN THE OUT-PATIENT SPECIAL
DEPARTMENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Mr. NETTLESHIP } (Diseases of the {	—	1.30	—	1.30	1.30	—
Mr. LAWFORD } Eye) {	1.30	—	1.30	—	—	—
Mr. ANDERSON (Diseases of Skin)	—	—	—	—	1.30	—
Dr. SEMON (Diseases of Throat) ..	—	1.30	—	—	1.30	—
Mr. BALLANCE (Diseases of Ear)	1.30	—	—	—	—	—
Mr. TRUMAN } (Diseases of Teeth)	—	10	—	—	10	—
(Vacant.) }	—	—	—	—	—	—
Dr. CORY (Vaccination)	—	—	11.30	—	—	—

DAYS AND HOURS OF LECTURES AND DEMONSTRATIONS.

WINTER SESSION.							Years of Attendance.
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	
Physics	—	—	—	—	—	12	1st Year.
Chemistry	—	10.30	—	10.30	10.30	—	do.
Descriptive and Surgical Anatomy ..	—	9.30	—	9.30	—	9.30	do.
	11	11	—	11	—	11	2nd Year.
Anatomical Demonstrations*	10½-4½	10½-4½	10½-4½	10½-4½	10½-4½	10½-1	1st & 2nd.
Physiology	9.30	—	9.30	—	9.30	—	do.
Physiological Demonstrations	10.30	12	—	12	12	—	1st Year.
	12	12	—	12	10.30	—	2nd Year.
Practical and Manipulative Surgery†	—	—	—	—	—	9	3rd Year.
Medicine	{ Oct., Nov., Dec.	4	—	—	4	4	} do.
	{ Jan., Feb., Mar.	9	—	—	9	9	
Surgery	{ Oct., Nov., Dec.	9	—	—	9	9	} do.
	{ Jan., Feb., Mar.	4	—	—	4	4	
Surgical Pathology	—	—	12	—	—	—	do.
Diseases of Women (Oct., Nov., Dec.)	—	4	—	—	—	—	3rd or 4th.
Pathological Anatomy (Practical) ..	—	—	—	—	—	11½-1½	do.
Diseases of the Eye (Oct., Nov., Dec.)	5	—	—	5	5	—	do.
Clinical Surgery (Special Course) ..	—	9	—	—	—	—	do.
Obstetric Demonstrations	—	—	9	—	—	—	do.
SUMMER SESSION.							Years.
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	
Botany	—	10	10	—	—	10	1st Year.
Materia Medica	12	—	12.30	—	12	—	do.
Practical Chemistry	10-12	—	—	10-12	10-12	—	do.
Practical Physiology	See Note	2	2	—	2	—	do.
Anatomical Demonstrations*	10-12	2-4	—	10-12	2-4	—	2nd Year.
Midwifery	4	4	—	4	4	—	do.
Comparative Anatomy	9	—	—	9	—	—	do.
Practical and Manipulative Surgery†	—	—	—	—	9	—	do.
Forensic Medicine	—	9	—	9	—	9	3rd Year.
Pathological Anatomy	—	—	9	—	9	—	do.
Do. Demonstration	4	—	—	—	—	—	do.
Mental Diseases	—	—	—	—	12	—	3rd or 4th.
Public Health and Sanitary Science	—	—	10.30	—	—	—	do.
Examination of the Eye	—	5	—	—	5	—	do.
Clinical Surgery (Special Course) ..	9	—	—	—	—	—	do.

The times of delivery of the Clinical Lectures are arranged, in accordance with other work, in the course of the Session.

NOTE.—On Mondays, at 2 p.m., during the Summer Session, Dr. CHARLES gives instruction to a Senior Class in Section Cutting and Mounting, in Volumetric Analysis, and in the use of Physiological Apparatus.

* The Dissecting Room is open to the Students from 9 a.m. till 5 p.m. Special Tutorial Classes in Anatomy are held by the Lecturers and Demonstrators preparatory to the First and Second Examinations of the Examining Board in England.

† Classes in Practical and Operative Surgery are held four times a week for six weeks prior to the final examinations of the Examining Board in January, April, and July. In connection with these Classes Clinical Instruction is given in the Wards by the Resident Assistant Surgeon, and a course of demonstrations on Museum specimens is given by the Curator, Mr. SHATTOCK.

SURGICAL OPERATIONS are performed on Wednesdays and Saturdays at 1.30 p.m., and on other days in cases of emergency.

In-Patients are admitted daily at 11.30 a.m.

Out-Patients are seen by the Assistant-Physicians and Assistant-Surgeons on the days stated in the Table (see p. 20). *Diseases of Women and Children* are treated, on Wednesdays and Saturdays at 1.30, by Dr. CORY.

Casual Patients are seen by the Resident Assistant-Physician, the Resident Assistant-Surgeon, the House-Surgeons, Assistant House-Surgeons and Dressers at 12 noon.

SPECIAL DEPARTMENTS.

(For Times of Attendance see Table, page 20.)

Diseases of the Eye.—Operations are performed at 4 p.m. on Tuesdays, and at 2 p.m., on Fridays. Ophthalmoscopic Demonstrations or Clinical Lectures on Diseases of the Eye are given every week; a class for learning the use of the Ophthalmoscope is held each Session, by Mr. LAWFORD.

Diseases of the Skin.—Instruction is given by Mr. ANDERSON on Fridays at 1.30 p.m.

Diseases of the Throat.—A short Course of Clinical Lectures is given to senior students by Dr. SEMON during the Winter Session.

Diseases of the Ear.—Instruction is given by Mr. BALLANCE on Mondays at 1.30 p.m.

Diseases of the Teeth.—Mr. TRUMAN and Assistant give instruction in Dental Surgery on Tuesdays and Fridays at 10 a.m.

Vaccination.—Practical Instruction is given by Dr. CORY once a week.

NOTE.—St. Thomas's Hospital is now recognised as a Local Vaccination Station, and Dr. CORY is authorised to give certificates of instruction in Vaccination according to the requirements of the Local Government Board. Fee One Guinea.

Post-Mortem Examinations and Pathological Demonstrations, by Dr. SHARKEY and Dr. HADDEN, Monday to Friday at 2 p.m., Saturday at 3 p.m.

Practical Instruction in the Administration of **Anæsthetics** is given by Mr. TYRRELL and Mr. WHITE.

In addition to the Clinical Instruction given in the Wards and the Out-Patients' Rooms by the Medical and Surgical Officers, and the Special Course of Clinical Surgery, Lectures on Clinical Medicine are delivered weekly during both the Winter and Summer Sessions by the Physicians, and on Clinical Surgery by the Surgeons, on the visiting day following their "taking-in" week, and a Course of Clinical Lectures on the Diseases of Women is given during the Winter Session by the Obstetric Physician.

SUGGESTIONS TO STUDENTS.

Gentlemen who propose to obtain the Licence of the Royal College of Physicians of London and the Diploma of Member of the Royal College of Surgeons of England, or the Licence of the Society of Apothecaries, must, in order to be able to register their attendance upon Hospital practice or lectures, possess the certificate in Arts granted by one of the bodies whose certificates are recognised by the General Medical Council. "The Regulations of the General Medical Council in regard to the Registration of Medical Students" contain particulars of the Preliminary Examinations, and can be had from Messrs. Spottiswoode & Co., 54, Gracechurch Street, E.C.

Students intending to obtain Medical Degrees in the University of London must pass both the Matriculation* and the Preliminary Scientific Examinations before commencing their regular Medical Studies.

For the Preliminary Scientific, and the Intermediate M.B. Examinations, Special Classes are held (see p. 27). Students not proceeding to degrees in the University of London, will reap much advantage by acquiring, in the Preliminary Scientific Class, the scientific knowledge and training demanded by the University; both in respect to the formation of a sound foundation for Medical Study and because such knowledge is necessary in competing for the Entrance Science Scholarships.

Students proposing to enter should put themselves, at an early period, in communication with the Medical Secretary, who will be always ready to advise them. It is necessary, when writing to him, to state what Preliminary Examination has been passed, and if the Student's name has been registered at the Medical Council Office.

Students on joining must produce a Certificate of Preliminary Examination or of Registration. It is best to join at the beginning of a Session, Winter or Summer, but it is in the power of a Student to enter at any time.

Students are not obliged to remain at the Hospital more than three years, provided they have obtained the certificates of attendance upon lectures required by the respective licensing bodies. They must, however, in the event of leaving the Hospital, be engaged during the fourth year in the acquisition of professional knowledge elsewhere.

It is right, however, that Students should be made aware that the loss of the fourth year of Hospital Study is strongly to be deprecated, since

* *Candidates who passed the Matriculation Examination in January, 1885, or previously, will be allowed to date the commencement of their Professional Studies from that Examination in accordance with former Regulations.*—University of London Calendar 1888-9, p. 159, Note.

at that period the necessity for attending Lectures has ceased, and their whole time can be spent in the study of disease in the wards of the Hospital.

Students, when qualified, are advised to use every effort to obtain the Senior appointments open to them, especially those of Non-resident House Physician, House Physician, Assistant House Surgeon, House Surgeon, and Resident Accoucheur. These appointments are accessible to Students of the Hospital without payment, and offer opportunities for obtaining practical professional knowledge, which cannot be estimated too highly.

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 Students are recommended to attend the Lectures, &c., in the following order; and, in accordance with the Regulations of the Qualifying Bodies, are required to show by their answers in the Sessional Examinations, that they have paid proper attention to the Lectures in each Course.

### FIRST YEAR.

*Winter Session.*—Anatomy, Dissections, Physiology, Chemistry.

*Summer Session.*—Materia Medica, Botany, Practical Physiology, Practical Chemistry.

### SECOND YEAR.

*Winter Session.*—Anatomy, Physiology, Dissections.

*Summer Session.*—Midwifery, Comparative Anatomy, Practical Surgery, Clinical Medicine, Clinical Surgery.

*N.B.*—Students should defer attendance on Lectures other than those of the First and Second Years until they shall have passed the Second Examination of the Examining Board in England.

### THIRD YEAR.

*Winter Session.*—Medicine, Surgery, Practical Surgery, Clinical Medicine, Clinical Surgery.

*Summer Session.*—Forensic Medicine, Pathological Anatomy, Clinical Medicine, Clinical Surgery.

### FOURTH YEAR.

Students will find it practically necessary under the Regulations of the Examining Board in England, to spend their Fourth Year in the Study of Clinical Medicine, Surgery, and Midwifery. No Student can be admitted to the Final Examination of that Board, until two years shall have elapsed subsequent to his having passed the Second Professional Examination, which cannot be done until after the Second Winter of Study.

In addition to the above, Students are advised, during their first Winter Session, to attend the Lectures on Physics and Natural Philosophy; in their third or fourth Summer Session, to attend the Lectures on Mental Disease, and on Public Health; in the third Winter, the Course of Surgical Pathology, and in the third or fourth Winter the Practical Course of Pathological Anatomy, the Lectures on Diseases of Women, and the Obstetric Demonstrations. The Course on Diseases of the Eye, and the teaching in the Eye Department should be attended in the third and fourth years. All these Courses are freely open to Students of the Hospital.

FEES FOR ATTENDANCE ON THE LECTURES  
AND ON THE  
PRACTICE OF THE HOSPITAL.

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**PERPETUAL TICKETS.**

*Admitting to Hospital Practice and Lectures for an unlimited period.*

The Perpetual Fee to Hospital Practice and Lectures may be paid in several ways:

- 1st. One Hundred and Twenty-five Guineas paid on entrance;
- 2nd. One Hundred and Thirty-eight pounds in two payments, £75 on entrance, and £63 at the beginning of the next year;
- 3rd. Payment by three instalments, viz., of £65 at the beginning of the first year, £50 at the beginning of the second year, and £30 at the beginning of the third year.

Gentlemen entering at St. Thomas's in the second\* year of their Studentship pay £65 for that year; £25 for the third year; or upon paying £85 on entrance, they will become Perpetual Students. Students entering in their third year pay £40; for the next year £20, or one payment of £55 on entrance will entitle them to be Perpetual Students.

The Fee for attendance on the *general* subjects required of Students in Dental Surgery, is for the two years, £55, or by instalments, £50 for the first year, and £10 for the second year. If certificates for *Dental* practice are also required, the special fee for that subject (page 26) has to be paid.

Regularly qualified Medical Practitioners are admitted to the Hospital practice, and to the Lectures and Library, on payment of a fee of £12 10s. for unlimited attendance; but are not entitled to receive certificates for such attendance without payment for the special certificates required (see p. 26).

All privileges in respect of Hospital attendance are granted subject to the approval of the Governors, and Students must conform to the regulations of the Hospital and Medical School, on which understanding alone cards of attendance are granted.

**EXTRA CHARGES.**

Students are now supplied with chemicals and materials to work with in the courses of Chemistry and Physiology without extra charge, but there are certain instruments and materials required during the course of study, as follows, viz.:

\* Students who have commenced the study of the Profession otherwise than by attendance at a Medical School, will be considered to be first year's Students on joining the Medical School, as the time previously spent does not count until three years' Lectures have been attended, but a deduction from the Perpetual Fee will be allowed in such cases.

NOTE.—Cheques may be made payable to the Medical Secretary, and crossed "London and County Bank, Lambeth."

Those attending the Class of Practical Physiology in the summer must provide themselves with Microscopes.

Students Dissecting pay for the parts they dissect at fixed rates, which are notified in the Library.

Each Clinical Clerk must provide himself with a Stethoscope and Registering Clinical Thermometer. Each Dresser is required to have a Registering Clinical Thermometer, a Pocket Case of Instruments, and a Case of Silver Catheters.

The fee for Practical Pharmacy is not included in the Perpetual fee, as many Students have received instruction in it before joining a Medical School; but instruction in Pharmacy and Pharmaceutical Manipulation, to meet the requirements of the Examining Board in England, and of the Society of Apothecaries, is given in the Dispensary of the Hospital by the Apothecary, Mr. S. PLOWMAN. The fee for this course is 5 Guineas for three months. Application to be made to the Medical Secretary.

The different Courses of Lectures, or the Hospital Practice, may also be attended separately on the following terms, which entitle to Certificates for such Attendances.

|                                                                                                                                  |                            |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <i>For the Medical and Surgical Practice, including Clinical Lectures and the Special Departments.</i>                           |                            |
| Three months .. .. . £15                                                                                                         | Twelve months .. .. . £40  |
| Six ditto .. .. . £26                                                                                                            | Perpetual .. .. . £55      |
| Nine ditto .. .. . £35                                                                                                           |                            |
| Dental Practice, 1 year 2 Gs., Perpetual 3 Gs.                                                                                   |                            |
| Midwifery Practice, 5 Gs.                                                                                                        | Ophthalmic Practice, 2 Gs. |
| <i>For Lectures and Demonstrations.</i>                                                                                          |                            |
| Medicine, Surgery, Physiology, Anatomy, Chemistry each                                                                           | 7 Gs. .. 10 Gs.            |
| Midwifery .. .. .                                                                                                                | 5 " .. 6 "                 |
| Materia Medica, Botany, Physics, Forensic Medicine, Pathological Anat., and Comparative Anat. each                               | 4 " .. 5 "                 |
| Mental Diseases, Diseases of the Eye, Public Health each                                                                         | 2 " .. 3 "                 |
| * Practical Chemistry, Practical Surgery, Practical Physiology, Pathological Anatomy including the Practical Course .. .. . each | 6 " .. —                   |
| Dissections, three months 4 Gs., six months 6 Gs., Perpetual 10 Gs.                                                              |                            |

Operative Surgery.—A voluntary class will be formed by Messrs. CLUTTON and PITTS during the Summer, and at other convenient times, for Gentlemen who wish to prepare for the Fellowship or other Examinations. This course will not include Operations on the Eye-ball. Fee, £5 5s.

Operative Surgery of the Eye.—A voluntary class will be formed by Mr. LAWFORD during the Summer. Fee, £2 2s.

Advanced Anatomy.—Voluntary classes for the M.B. Examinations of Oxford and Cambridge and for the Fellowship of the Royal College of Surgeons will be formed by the Lecturers on Anatomy, commencing in the months of February and September. Fee, £6 6s.

Laryngology.—A special course is given by Dr. SEMON during the Winter Session. Fee for Gentlemen, not Students of the Hospital, 3 Gs.

Special Courses of Obstetric Demonstrations are given by Dr. CORY throughout the year. Fee, £3 3s.

Public Health and Sanitary Science.—Lectures are open to Gentlemen, not Students of the Hospital, and instruction will be given specially to Candidates for Certificates and Examinations in Sanitary Science and Hygiene.

\* These amounts do not include the extra charges in the Practical Courses for Materials, Instruments, &c.

## UNIVERSITY OF LONDON.

## PRELIMINARY SCIENTIFIC AND INTERMEDIATE M.B. CLASSES.

## PRELIMINARY SCIENTIFIC EXAMINATION.

Special Classes in the subjects required for the Preliminary Scientific Examination at the University of London, will be held from October to July, and Students joining the Classes are allowed to attend the Courses of Lectures on Chemistry in the Winter, and on Botany and Comparative Anatomy in the Summer. (*See p. 21.*)

|                                                       | Mon.                      | Tues. | Wed.        | Thurs.       | Fri.              | Sat.      |
|-------------------------------------------------------|---------------------------|-------|-------------|--------------|-------------------|-----------|
| Botany. A. W. BENNETT, M.A. . . .                     | —                         | —     | 11          | —            | —                 | —         |
| Chemistry, Inorganic }<br>" Practical } Dr. BERNAYS { | Winter 11.30<br>Summer 11 | —     | —           | 12           | —                 | —         |
|                                                       | —                         | —     | —           | Winter 11.30 | —                 | —         |
| Physics. W. H. STONE, M.A., M.B.                      | —                         | —     | —           | —            | January to July 3 | Winter 12 |
| Zoology. G. GULLIVER, M.A., M.B..                     | —                         | —     | Winter 1.30 | Summer 2.0   | —                 | —         |

N.B.—A Microscope and simple Dissecting Apparatus must be provided by each Member of the Class.

Fee to Students of the Hospital, inclusive of

Practical Chemistry and Chemicals .. .. *Ten Guineas.*

To others, ditto .. .. *Twelve Guineas.*

Fee for any single subject .. .. *Four Guineas.*

Subsequent Courses, half Fee, if recommended by the respective Teachers (except Chemicals, for which a charge of One Guinea and a half is made).

## INTERMEDIATE EXAMINATION IN MEDICINE.

Special Classes in the subjects required for the January and July Examinations are held from October to July.

|                                                                                    | Mon. | Tues. | Wed. | Thurs. | Fri.                 | Sat. |
|------------------------------------------------------------------------------------|------|-------|------|--------|----------------------|------|
| Anatomy. R. W. REID, C.M., F.R.C.S.                                                | 3    | —     | —    | 3      | —                    | —    |
| Materia Medica }<br>and }<br>Pharmaceutical } S. PLOWMAN, F.R.C.S.<br>Chemistry. } | —    | 3     | —    | —      | 3                    | —    |
| Organic Chemistry }<br>Organic Analysis } Dr. BERNAYS. . .                         | —    | —     | 11   | —      | —                    | —    |
|                                                                                    | —    | —     | —    | —      | —                    | 10   |
| Physiology. T. C. CHARLES, M.D. . .                                                | —    | —     | —    | —      | Winter 2<br>Summer 1 | —    |

|                                                                                         |                        |
|-----------------------------------------------------------------------------------------|------------------------|
| Fee to Students of the Hospital inclusive of<br>Organic Analysis and Chemicals* .. .. . | <i>Nine Guineas.</i>   |
| To others ditto .. .. .                                                                 | <i>Twelve Guineas.</i> |
| Fee for any Single Subject .. .. .                                                      | <i>Three Guineas.</i>  |

Subsequent Courses, half Fee (except Chemicals, for which full fee is charged).  
\* Instruction and Practice in Organic Analysis is essential for this Examination.  
*N.B.—Private Classes are held for the Final M.B. Examination.*

## SCHOLARSHIPS, PRIZES, APPOINTMENTS, AND HONORARY DISTINCTIONS.

### OPEN SCHOLARSHIPS IN NATURAL SCIENCE.

As an inducement to the study of Natural Science before the commencement of the strictly Medical Course, two Scholarships, of the value of 125 Guineas and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and either Botany or Zoology, at the option of Candidates. The Examinations for these Scholarships will be held on September 26th, 27th, and 28th, 1888, the subjects being the same as those for honours in the Preliminary Scientific Examination of the London University, viz.: Botany, Zoology, Inorganic Chemistry (including Practical Chemistry), and Physics or Natural Philosophy. These Scholarships are open to all Students who have passed a recognised Preliminary Examination in Arts, and have not yet attended Lectures on Anatomy and Physiology of the first year, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once as Perpetual Pupils. Chemistry and Physics are compulsory subjects for this Examination, and Candidates must take up one of the other subjects at their option. The Examination will be conducted by means of written papers and practical work. The names of Competitors with Certificate of Preliminary Examination must be sent to the Secretary not later than September 24th.

#### THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. TITE, C.B., M.P., F.R.S., is endowed with £1,000 Consols, the Interest on which, about £27 10s., is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the first Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

#### THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir JOHN MUSGROVE, Bart., the late President of the Hospital, is endowed with £1,400 Consols, the Interest on which, about £38 10s., is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the Second Winter Session. It is tenable for two years, provided the holder obtains a place in the 1st Class in the Examinations at the end of the third winter.

#### THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. Thomas Bevell Peacock, for many years Physician, and at the time of his death Consulting Physician to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship is awarded and held upon the same terms; and is given every second year in alternation with that Scholarship.

*Gentlemen obtaining these Scholarships are not precluded from receiving any of the Prizes awarded at the subsequent periodical examinations.*

## P R I Z E S.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1888-1889:—

TWO OPEN SCHOLARSHIPS IN NATURAL SCIENCE of the value of 125 Guineas and £60 respectively, at Entrance.

AT THE END OF FIRST YEAR.

*Winter.*

|         |                                      |          |
|---------|--------------------------------------|----------|
| 1st. .. | The William Tite Scholarship .. .. . | £27 10s. |
| 2nd. .. | College Prize .. .. .                | £20.     |
| 3rd. .. | Ditto .. .. .                        | £10.     |

*Summer.*

|         |                       |      |
|---------|-----------------------|------|
| 1st. .. | College Prize .. .. . | £15. |
| 2nd. .. | Ditto .. .. .         | £10. |

SECOND YEAR.

*Winter.*

|         |                                  |          |
|---------|----------------------------------|----------|
| 1st. .. | The Musgrove Scholarship .. .. . | £38 10s. |
| 2nd. .. | College Prize .. .. .            | £20.     |
| 3rd. .. | Ditto .. .. .                    | £10.     |

*Summer.*

|         |                       |      |
|---------|-----------------------|------|
| 1st. .. | College Prize .. .. . | £15. |
| 2nd. .. | Ditto .. .. .         | £10. |

THIRD YEAR.

*Winter.*

Second Tenure of The Peacock Scholarship (if holder obtains 1st Class in this examination) £38 10s.

|         |                       |      |
|---------|-----------------------|------|
| 1st. .. | College Prize .. .. . | £20. |
| 2nd. .. | Ditto .. .. .         | £15. |
| 3rd. .. | Ditto .. .. .         | £10. |

*Summer.*

|         |                       |      |
|---------|-----------------------|------|
| 1st. .. | College Prize .. .. . | £15. |
| 2nd. .. | Ditto .. .. .         | £10. |

Students of each year are classed according to their respective merits in the examinations, and those in the *first* class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

Free Scholarships are given to distinguished Pupils of Merchant Taylors' and City of London Schools, and Epsom College.

In addition there are awarded—

THE CHESELDEN MEDAL, *Annually.*

THE MEAD MEDAL, *do.*

THE SOLLY MEDAL AND PRIZE, *Biennially.*

THE GRAINGER TESTIMONIAL PRIZE, *Annually.*

THE TREASURER'S GOLD MEDAL, *do.*

The CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq., is annually awarded to the Fourth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

The MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH, is awarded annually, to a Fourth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

Competitors for either of these Medals must have been Students of St. Thomas's for at least two out of the four Winter Sessions.

The SOLLY MEDAL, together with a Prize in Money, will be awarded biennially. Those Students are eligible to compete who shall be of from

three to six years' standing. The award is made for the best series of Reports of Surgical cases coming under the Student's personal observation in the Wards, not, however, to exceed ten in number. Preference is given, merit in other respects being equal, to Reports illustrated by the author's drawings, and short Clinical Remarks must accompany each Report. The next award will be made at the end of 1889-90, papers to be sent in before April 1st, 1890.

The GRAINGER TESTIMONIAL PRIZE, of the value of Fifteen Pounds, is awarded annually to the Student who shall have completed his third year of study at St. Thomas's Hospital, and not have exceeded his sixth year, for the best Anatomical or Physiological Essay devoted to the explanation of preparations and dissections illustrative of the subject. The successful Essay and the accompanying Preparations and Dissections will become the property of the Medical School. A small sum is provided annually to reimburse unsuccessful competitors for any expense which they may have incurred in the preparation of suitable illustrations. When such compensation is allowed, the Preparations and Dissections become the property of the Medical School. Subject to the approval of the School Committee, candidates may select their own topics; otherwise, the following two are given for selection:—1. A series of Preparations and Dissections illustrating the Anatomy of the Male and Female Bladder; Prostate; Uterus; Ovaries; Female Urethra; Prostatic, Membranous and Bulbous portions of the Male Urethra, accompanied by a description of the parts exposed in the specimens. 2. The Sub-Maxillary Gland, showing dissections of the gland *in situ* with its nerve connections, and by microscopical preparations the ultimate distribution of the nerves. Papers to be sent in before October 1st, 1889.

The TREASURER'S GOLD MEDAL for General Proficiency and Good Conduct, is awarded at the end of the 4th Winter Session to the Student who has passed through his pupillage in St. Thomas's Hospital in the most meritorious manner.

#### APPOINTMENTS.

A RESIDENT ASSISTANT PHYSICIAN and a RESIDENT ASSISTANT SURGEON, at a salary of £100 per annum each, are from time to time appointed. The appointments are annual, but the tenure of office may be renewed for a term not exceeding three years.

TWO RESIDENT and ONE NON-RESIDENT HOUSE PHYSICIANS, an ASSISTANT HOUSE PHYSICIAN, TWO HOUSE SURGEONS, TWO ASSISTANT HOUSE SURGEONS, and a RESIDENT ACCOUCHEUR, are selected every three months from Gentlemen who have obtained their professional diplomas; they hold office for three or six months. One House Physician, the Assistant House Physician, and the Assistant House Surgeons, are non-resident, but the other Officers, together with the Dressers, are provided with Rooms and Commons during their period of attendance in the Hospital, free of expense.

TWO OPHTHALMIC CLINICAL ASSISTANTS, chosen from Qualified Students who have worked satisfactorily in the Ophthalmic Department, are appointed for six months, one of whom receives a Salary at the rate of £50 per annum, and the other is provided with Commons.

CLINICAL ASSISTANTS in the Special Departments for Diseases of the Skin, Throat, and Ear, are appointed every three months from Students who have served as Clinical Clerks or Dressers in those Departments.

ASSISTANTS to the Teachers of Practical and Manipulative Surgery are appointed for the Winter and Summer Sessions.

CLINICAL CLERKS, and DRESSERS, to In-Patients are selected to the number of at least 100 each year. They are chosen from amongst the most eligible pupils. CLINICAL CLERKS, and DRESSERS, for the Out-Patients are also appointed to the number of at least 80 to 100 each year.

ALL STUDENTS have the opportunity afforded them of being engaged in

the performance of practical duties in connection with the Medical, Surgical, Obstetrical, Ophthalmic, and Pathological Departments of the Hospital.

Two HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. They are eligible for annual re-appointment, but may not hold office for more than five years. Preference will be given to Gentlemen who have been distinguished for merit, and have completed their studies in the School. The payment of the Registrars is subject to the presentation of a Report upon the Practice of the Hospital, and to such Report being regarded as satisfactory by the Medical Officers to whom it shall have been referred.

TWO OR MORE STUDENTS are selected from those who have completed their Second Winter Session, to act as Assistants in the Physiological Laboratory. They receive Certificates of Honour according to merit.

PROSECTORS are appointed in the early part of the Winter Session, and Certificates of Honour are awarded to the best Dissectors.

STUDENTS are likewise appointed to act as Assistants to the Demonstrators of Pathological Anatomy in the Post-mortem Room.

STUDENTS who have attended a course of Lectures on Midwifery may enter their names as Obstetric Clerks and will be appointed in rotation. Each Clerk holds office for a fortnight, and Certificates of Honour are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases.

Students have access, with the permission of the Officers under whose superintendence they are placed, to the Museums of Human and Comparative Anatomy and Pathology—of *Materia Medica*—of Botany—and of Chemistry and Mineralogy—and to the Laboratories of Practical Physiology and Practical Chemistry; also, by special permission, to Dr. Stone's collection of Physical apparatus; and to the Library, which contains a large collection of works of reference and modern text-books.

## REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS.

1. In accordance with the Regulations of the Qualifying Bodies, Students will be required to attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise their Schedules cannot be signed.

2. There shall be held at least two Examinations in each Winter and one in each Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

|                      |                                 |                                |                              |
|----------------------|---------------------------------|--------------------------------|------------------------------|
| 1st YEAR'S SUBJECTS. |                                 | 2nd YEAR'S SUBJECTS—continued. |                              |
| WINTER .             | Anatomy . . . . . 600           | Physiology . . . . . 600       |                              |
|                      | Practical Anatomy . . . 200     | Total . . . . . 1400           |                              |
|                      | Physiology . . . . . 600        |                                |                              |
|                      | Chemistry . . . . . 600         | SCMMEB .                       | Midwifery . . . . . 600      |
|                      | Total . . . . . 2000            |                                | Comparative Anatomy . 100    |
|                      |                                 |                                | Practical Surgery . . . 100  |
|                      |                                 |                                | Total . . . . . 700          |
| SUMMER .             | Practical Chemistry . . 300     | 3rd YEAR'S SUBJECTS.           |                              |
|                      | <i>Materia Medica</i> . . . 300 | WINTER .                       | Medicine . . . . . 650       |
|                      | Botany . . . . . 150            |                                | Surgery . . . . . 650        |
|                      | Practical Physiology . . 300    |                                | Practical Surgery . . . 200  |
|                      | Total . . . . . 1050            |                                | Total . . . . . 1500         |
| 2nd YEAR'S SUBJECTS. |                                 | SUMMER .                       |                              |
| WINTER .             | Anatomy . . . . . 600           |                                | Forensic Medicine . . . 250  |
|                      | Practical Anatomy . . . 200     |                                | Pathological Anatomy . . 350 |
|                      |                                 |                                | Total . . . . . 600          |

4. All Students who have obtained at least one-third of the total number of marks in each subject, and not less than two-thirds of the total number allotted to all the subjects collectively, shall be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the subjects collectively shall be placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position will not be published, but a General List showing the exact position of each Student at every Examination shall be kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

5. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in each Summer Session.

6. The number of marks allotted to the Examinations for the MEAD and CHESELDEN Medals shall be 600 each.

7. In awarding the TREASURER'S Medal the number of marks obtained at the Sessional Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

8. The Authorities reserve the right of withholding any Prize, if no competitor of sufficient merit presents himself.

## Distribution of Prizes for the Past Sessions.

### SUMMER SESSION, 1887.

#### FIRST YEAR'S STUDENTS.

|                                               |   |                            |
|-----------------------------------------------|---|----------------------------|
| A. KING, <i>Norwich</i> ... ..                | { | College Prize, £15,        |
|                                               |   | and Certificate of Honour. |
| H. BURDEN, <i>Belfast</i> ... ..              | { | College Prize, £10,        |
|                                               |   | and Certificate of Honour. |
| L. G. SCUDAMORE, <i>Lewisham</i> ... ..       |   | Certificate of Honour.     |
| W. F. UMNEY, <i>Sydenham</i> ... ..           |   | Certificate of Honour.     |
| D. F. SHEARER, <i>Bradford, Yorks.</i> ... .. |   | Certificate of Honour.     |
| T. H. KELLOCK, <i>Totnes</i> ... ..           |   | Certificate of Honour.     |
| A. BANKS, <i>Clapham</i> ... ..               |   | Certificate of Honour.     |

#### SECOND YEAR'S STUDENTS.

|                                           |   |                            |
|-------------------------------------------|---|----------------------------|
| A. F. STABB, <i>Ilfracombe</i> ... ..     | { | College Prize, £15,        |
|                                           |   | and Certificate of Honour. |
| H. S. COOPER, <i>Brightlingsea</i> ... .. | { | College Prize, £10,        |
|                                           |   | and Certificate of Honour. |

#### THIRD YEAR'S STUDENTS.

|                                              |   |                            |
|----------------------------------------------|---|----------------------------|
| H. G. TURNEY, <i>Camberwell Grove</i> ... .. | { | College Prize, £15,        |
|                                              |   | and Certificate of Honour. |
| E. A. ROBEETS, <i>Birmingham</i> ... ..      | { | College Prize, £10,        |
|                                              |   | and Certificate of Honour. |

## WINTER SESSION, 1887-88.

## ENTRANCE SCIENCE SCHOLARSHIPS.

|                                             |                                                       |
|---------------------------------------------|-------------------------------------------------------|
| J. E. HARRIS, <i>Lavender Hill</i> ... ..   | } Scholarship, 125 Gs.,<br>and Certificate of Honour. |
| W. B. WINSTON, <i>Oxford Gardens</i> ... .. |                                                       |
|                                             | } Scholarship, £60,<br>and Certificate of Honour.     |

## FIRST YEAR'S STUDENTS.

|                                                     |                                                                   |
|-----------------------------------------------------|-------------------------------------------------------------------|
| J. H. FISHER, <i>Exeter</i> ... ..                  | } The Wm. Tite Scholarship,<br>£30,<br>and Certificate of Honour. |
| A. BANKS, <i>Clapham</i> ... ..                     |                                                                   |
| Eq. { C. S. WALLACE, <i>Haslemere</i> ... ..        | } College Prize, £10,<br>and Certificate of Honour.               |
| Eq. { C. S. JAFFÉ, <i>Westbourne Terrace</i> ... .. |                                                                   |
| Eq. { W. A. BOWRING, <i>Kingston Hill</i> .. ..     | } Certificate of Honour.                                          |
| Eq. { W. B. WINSTON, <i>Oxford Gardens</i> ... ..   |                                                                   |
| W. L. WAINWRIGHT, <i>Weybridge</i> ... ..           | Certificate of Honour.                                            |
| W. POTTER, <i>York</i> ... ..                       | Certificate of Honour.                                            |
| W. P. PURVIS, <i>Greenwich</i> ... ..               | Certificate of Honour.                                            |
| F. O. GRANT, <i>Croydon</i> ... ..                  | Certificate of Honour.                                            |
| J. E. HARRIS, <i>Lavender Hill</i> ... ..           | Certificate of Honour.                                            |
| B. G. HEATHER, <i>Brockley</i> ... ..               | Certificate of Honour.                                            |
| T. W. HICKS, <i>Brixton</i> ... ..                  | Certificate of Honour.                                            |
| P. C. GABBETT, <i>Lower Norwood</i> ... ..          | Certificate of Honour.                                            |

## SECOND YEAR'S STUDENTS.

|                                             |                                                                  |
|---------------------------------------------|------------------------------------------------------------------|
| C. P. LOVELL, <i>Hyde Park</i> ... ..       | } The Peacock Scholarship,<br>40 Gs., and Certificate of Honour. |
| W. F. UMNEY, <i>Sydenham</i> ... ..         |                                                                  |
| H. BURDEN, <i>Belfast</i> ... ..            | } College Prize, £20,<br>and Certificate of Honour.              |
| T. H. KELLOCK, <i>Totnes</i> ... ..         |                                                                  |
| A. KING, <i>Norwich</i> ... ..              | } College Prize, £10,<br>and Certificate of Honour.              |
| E. T. WHITEHEAD, <i>Battersea</i> ... ..    |                                                                  |
| D. F. SHEARER, <i>Bradford, York</i> ... .. | Certificate of Honour.                                           |

## THIRD YEAR'S STUDENTS.

|                                                |                                                                                                        |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| A. F. STABB, <i>Ilfracombe</i> ... ..          | } 2nd Tenure of the Musgrove<br>Scholarship, with<br>College Prize, £20,<br>and Certificate of Honour. |
| S. G. TOLLER, <i>Notting Hill</i> ... ..       |                                                                                                        |
| W. G. G. STOKES, <i>Cambridge</i> ... ..       | } College Prize, £15,<br>and Certificate of Honour.                                                    |
| T. W. LAMBERT, <i>Cottingham</i> ... ..        |                                                                                                        |
| G. S. S. SMITH, <i>Lagos</i> ... ..            | } College Prize, £10,<br>and Certificate of Honour.                                                    |
| C. F. HARFORD-BATTERSBY, <i>Chelsea</i> ... .. |                                                                                                        |
|                                                | Certificate of Honour.                                                                                 |

## PROSECTORS.

|                                                    |                        |
|----------------------------------------------------|------------------------|
| J. E. F. ANDRÉ, <i>West Kensington Park</i> ... .. | Certificate of Honour. |
| H. BURDEN, <i>Belfast</i> ... ..                   | Certificate of Honour. |
| T. H. KELLOCK, <i>Totnes</i> ... ..                | Certificate of Honour. |
| W. F. UMNEY, <i>Sydenham</i> ... ..                | Certificate of Honour. |
| E. T. WHITEHEAD, <i>Battersea</i> ... ..           | Certificate of Honour. |

**ASSISTANTS IN PHYSIOLOGICAL LABORATORY.**

|                                          |                        |
|------------------------------------------|------------------------|
| C. R. BOX, <i>Camberwell</i> ... ..      | Certificate of Honour. |
| T. A. DUKES, <i>Croydon</i> ... ..       | Certificate of Honour. |
| J. C. ROUND, <i>Sydenham Hill</i> ... .. | Certificate of Honour. |
| A. M. WILSON, <i>Cape Town</i> ... ..    | Certificate of Honour. |

**SOILY MEDAL AND PRIZE.**

|                    |                       |
|--------------------|-----------------------|
| C. H. JAMES ... .. | Medal and Prize, £20. |
|--------------------|-----------------------|

**PRACTICAL MEDICINE.**

|                                |                                                            |
|--------------------------------|------------------------------------------------------------|
| H. G. TURNEY ... ..            | } The Mead Medal, founded by<br>Mr. and Mrs. NEWMAN SMITH. |
| Æq. { W. H. L. COPELAND ... .. |                                                            |
| T. P. COWEN ... ..             | } Special Mention and Certificates<br>of Honour.           |
| P. C. THOMAS .. ..             |                                                            |

**SURGERY AND SURGICAL ANATOMY.**

|                            |                                                                       |
|----------------------------|-----------------------------------------------------------------------|
| F. C. ABBOTT ... ..        | } The Cheselden Medal,<br>founded by the late GEORGE<br>VAUGHAN, Esq. |
| Æq. { A. N. BOYCOTT ... .. |                                                                       |
| H. H. HULBERT ... ..       | } Special Mention and Certificates<br>of Honour.                      |

**RESIDENT ACCOUCHEURS.**

|                       |                        |
|-----------------------|------------------------|
| E. SOILY ... ..       | Certificate of Honour. |
| W. A. BOND ... ..     | Certificate of Honour. |
| H. J. SMYTH ... ..    | Certificate of Honour. |
| J. D. BALLANCE ... .. | Certificate of Honour. |

**HOUSE PHYSICIANS.**

|               |                  |                        |
|---------------|------------------|------------------------|
| H. P. HAWKINS | } ... ..         | Certificate of Honour. |
| H. J. MACEVOY |                  | Certificate of Honour. |
| W. W. ORD     |                  | Certificate of Honour. |
| E. HOBHOUSE   |                  | Certificate of Honour. |
| R. NAIRN      |                  | Certificate of Honour. |
| H. J. SMYTH   | } Non-Resident { | Certificate of Honour. |
| R. NAIRN      |                  | Certificate of Honour. |
| J. T. CALVERT |                  | Certificate of Honour. |

**ASSISTANT HOUSE PHYSICIANS.**

|                        |                        |
|------------------------|------------------------|
| H. A. SANSOM... ..     | Certificate of Honour. |
| H. T. BULSTRODE ... .. | Certificate of Honour. |
| S. B. COOK ... ..      | Certificate of Honour. |

**HOUSE SURGEONS.**

|                      |                        |
|----------------------|------------------------|
| H. S. JONES ... ..   | Certificate of Honour. |
| J. H. TONKING ... .. | Certificate of Honour. |
| E. C. STABB ... ..   | Certificate of Honour. |
| L. A. BIDWELL ... .. | Certificate of Honour. |

**ASSISTANT HOUSE SURGEONS.**

|                      |                        |
|----------------------|------------------------|
| L. A. BIDWELL ... .. | Certificate of Honour. |
| W. F. BROOK ... ..   | Certificate of Honour. |
| J. T. CALVERT ... .. | Certificate of Honour. |
| W. W. ORD ... ..     | Certificate of Honour. |
| F. FAWSETT ... ..    | Certificate of Honour. |
| E. SOILY ... ..      | Certificate of Honour. |
| C. BROWN ... ..      | Certificate of Honour. |
| R. V. SOILY ... ..   | Certificate of Honour. |

**FOR GENERAL PROFICIENCY AND GOOD CONDUCT.**

|                     |                                  |
|---------------------|----------------------------------|
| F. C. ABBOTT ... .. | } The Treasurer's Gold<br>Medal. |
|                     |                                  |

*THE FOLLOWING DISTINCTIONS HAVE BEEN OBTAINED  
BY STUDENTS OF ST. THOMAS'S HOSPITAL DURING  
THE PAST YEAR:—*

At the Intermediate Examination in Medicine, University of London, an Exhibition and Gold Medal in Anatomy and an Exhibition and Gold Medal in Organic Chemistry by Mr. F. C. ABBOTT; an Exhibition and Gold Medal in Physiology by Mr. C. J. MARTIN.

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# THE MUSEUM OF HUMAN AND COMPARATIVE ANATOMY AND PATHOLOGY.

*Curator.*—S. G. SHATTOCK, Esq., F.R.C.S.

Among the earliest contributors to this Museum were Mr. CLINE, Sir A. COOPER, Mr. TRAVERS, and Mr. TYRRELL.

The Printed Catalogue of the Museum consists of three octavo volumes: in the first volume, edited by Mr. JOHN F. SOUTH, are described the preparations of Healthy Human, Microscopical, and Comparative Anatomy; and the 2nd and 3rd volumes, edited by Mr. SYDNEY JONES, contain descriptions of the specimens illustrative of Pathological Anatomy.

The COLLECTION of HUMAN ANATOMY consists of a Physiological and a Pathological Department: the former contains, besides wax models and casts, a large number of dissected Preparations, illustrating the Organs of Locomotion and Sense; the Nervous System; the Digestive, Respiratory, and Urinary Apparatus; the Vascular System, the Organs of Reproduction, and the tissues.

The Pathological Division is very rich, containing above 4000 Specimens, arranged in thirty-seven Sections, as follows:—

SECT.

- A. Injuries of Bone: Fractures.
- B. Injuries of Joints: Dislocations.
- C. Diseases of Bone.
- D. Diseases of Joints.
- E. Diseases of the Spinal Column.
- F. Injuries and Diseases of the Muscular System.
- G. Injuries and Diseases of the Eye.
- H. Injuries and Diseases of the Ear.
- I. Injuries and Diseases of the Nose, Antrum, &c.
- K. Injuries and Diseases of the Skin and Subcutaneous Cellular Tissue.
- L. Injuries of the Skull.
- M. Injuries of the Spine.
- N. Injuries and Diseases of the Nervous System.
- O. Injuries and Diseases of Mouth, Fauces, Pharynx, and the Esophagus.
- P. Injuries and Diseases of the Stomach.
- Q. Injuries and Diseases of the Intestines and Peritoneum.
- R. Intussusception, Internal Strangulation, and Hernia.
- S. Injuries and Diseases of the Liver.
- T. Diseases of the Pancreas and Salivary Glands.
- U. Injuries and Diseases of the Spleen.
- V. Diseases of Thyroid, Thymus, and Suprarenal Capsules.

SECT.

- W. Injuries and Diseases of the Respiratory Apparatus.
- X. Injuries and Diseases of the Heart and Pericardium.
- Y. Injuries and Diseases of Arteries and Veins.
- Z. Diseases of Lymphatic and Lacteal Vessels and Glands.
- AA. Injuries and Diseases of the Kidneys, and Ureters.
- PB. Injuries and Diseases of the Bladder.
- CC. Diseases of the Prostate Gland and Vesiculae Seminales, Urinary and Prostatic Calculi.
- DD. Injuries and Diseases of the Penis and Urethra.
- EE. Injuries and Diseases of the Testicles and Scrotum.
- FF. Diseases of the Ovaries and Fallopian Tubes.
- GG. Injuries and Diseases of the Uterus, Vagina, and external organs.
- HH. Diseases and displacements of the Ovum.
- II. Diseases of the Breast.
- KK. Tumours and other allied Morbid Growths.
- LL. Malformations.
- MM. Wax Models and Casts.

BONES, JOINTS, &c.—Amongst the specimens illustrating Injuries of Bones and Joints, are nearly all those described and figured in Sir A. Cooper's Treatise on 'Dislocations and Fractures of the Joints,' and in Cooper's and Travers's 'Surgical Essays.'

This section has been enriched by Sir William MacCormac, who presented numerous specimens of gunshot injuries, fractures, &c., obtained from cases under his care during the Franco-German War (1870).

Sir A. Cooper's preparations, illustrating repair after fracture, are contained in this Section.

**EYE.**—This Section has been arranged by Mr. Dixon, and contains specimens described and figured by Sir A. Cooper, Mr. Travers, and Mr. Saunders.

**SKIN.**—Several Tumours are contained in this Section, as well as, amongst others, the horn, ten inches in length, removed from a man's forehead by Sir A. Cooper.

**HEAD, SPINE, NERVOUS SYSTEM.**—Showing all kinds of Injuries to the Skull; Spinal Injuries, which have been subjected to operation by Cline, Tyrrell, and South, as well as every variety, frequent and rare, of disease of the Nervous System.

**INTESTINES AND PERITONEUM.**—Travers's Preparations, illustrating 'The Process of Nature in repairing Injuries of the Intestines,' are contained in this Section.

**HERNIA.**—This Section contains nearly all the Preparations figured and described in 'Cooper's Hernia.' Besides the more common varieties of Hernia, there are Specimens of Mesenteric, Mesocolic, Vesical, Thyroideal, Ischiatic, Perineal, and Phrenic Hernia.

**LIVER.**—Besides every variety of Hepatic Disease, this Section contains a large number of Biliary Calculi, many of which have been presented by Dr. Ord. Some specimens of Actinomycosis are also contained in it.

**RESPIRATORY AND VASCULAR SYSTEMS.**—Amongst these Preparations are two Specimens, showing ligature of the Abdominal Aorta; one of them the case of Sir A. Cooper; the other that of Mr. John F. South. There are also Specimens of spontaneous obliteration of the Aorta.

The Preparations illustrative of Travers's experiments on Arteries and Veins are in the collection.

There are also very interesting Specimens of Diseased Heart, described by Dr. Wells and Dr. Elliotson.

**KIDNEYS.**—Described and arranged by Mr. Simon.

**URINARY CALCULI.**—250 in number—analysed by Mr. Heisch and Dr. Bernays.

**TESTES.**—Most of the preparations figured in Sir A. Cooper's work 'On the Testis,' are contained in this Section.

**MALFORMATIONS.**—This Section contains Specimens of Spina Bifida, Acephalous and double monsters, Ectopia Cordis, Malformations of the Heart, Urinary, and Generative Organs. Most of them have been elaborately described by Mr. R. D. Grainger, and the malformations of the heart are referred to by Dr. Farre and Dr. Peacock in their works. There are also very interesting specimens of malformation described by Dr. Bristowe, Mr. Le Gros Clark, and Mr. Sydney Jones.

The Museum contains a considerable number of valuable Ethnological Specimens.

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**THE COLLECTION OF COMPARATIVE ANATOMY** comprises about 700 Preparations, some of them very rare and valuable.

A large number of these Specimens were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons.

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**THE CABINETS OF MICROSCOPICAL ANATOMY**, which are under the charge of the Demonstrator of Practical Physiology, contain upwards of 2,000 injected and other Specimens of normal and morbid Histology, parasites, urinary deposits, &c. These include the Preparations made by Mr. Rainey, to illustrate the Histological Course of Lectures; and others described by him in Papers published in the Philosophical, Medico-Chirurgical, and Microscopical Transactions, and in various scientific works. This collection has been considerably enlarged by the addition of a series of specimens presented by Dr. Acland, which includes the chief forms of micro-organisms found in diseased tissues, as well as specimens illustrating the development of the Chick. The specimens are available for use by students who wish to examine them, subject to such regulations as may be deemed necessary.

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**THE MATERIA MEDICA MUSEUM** contains a complete collection of all the chemicals and organic substances included in the British Pharmacopœia of 1885; all these are named and numbered.

A second collection of all the chief medicinal substances is placed in drawers, so as to be available for the use of students.

A large and very fine collection of dried medicinal plants, named according to the latest nomenclature, is displayed on the walls of the Museum.

The Museum is under the conjoint superintendence of Dr. Stone and Mr. Shattock.

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**THE COLLECTION OF CHEMISTRY AND MINERALOGY** is under the Superintendence of Dr. Bernays, who presented the larger part of the Specimens contained in it. It is displayed with the Collection of Materia Medica.

# St. Thomas's Hospital.

## MEDICAL AND PHYSICAL SOCIETY.

---

*President, 1888-89.*

DR. W. B. HADDEN.

---

*Vice-Presidents.*

|                         |                      |
|-------------------------|----------------------|
| THE PHYSICIANS.         | S. PLOWMAN, Esq.     |
| THE SURGEONS.           | DR. RAYNER.          |
| THE ASSIST.-PHYSICIANS. | R. W. REID, Esq.     |
| THE ASSIST.-SURGEONS.   | G. RENDLE, Esq.      |
| DR. BERNAYS.            | S. G. SHATTOCK, Esq. |
| DR. A. CARPENTER.       | DR. SHERRINGTON.     |
| DR. CRANSTOUN CHARLES.  | DR. SEYMOUR TAYLOR.  |
| W. EDMUNDS, Esq.        | C. E. TRUMAN, Esq.   |
| DR. KILNER.             |                      |

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*Hon. Secretaries.*

|               |             |
|---------------|-------------|
| F. C. ABBOTT. | E. E. WARE. |
|---------------|-------------|

---

*Committee.*

|               |                   |
|---------------|-------------------|
| E. SOLLY.     | J. W. MACTAVISH.  |
| F. FAWSSETT.  | H. BURDEN.        |
| C. H. JAMES.  | J. E. F. ANDRÉ.   |
| H. G. TURNEY. | C. S. WALLACE.    |
| S. G. TOLLER. | W. L. WAINWRIGHT. |

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This Society was originated in the early part of the present century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of General Interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Library on alternate Thursdays at 8.30 P.M., and terminate not later than 10 P.M.

The soirée, to which past and present students are invited, will be held in May or June, in the Grand Entrance Hall and Corridor of the Hospital.

Further information can be obtained of the Hon. Secretaries.

# ST. THOMAS'S HOSPITAL REPORTS.

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VOL. XVII., NEW SERIES,

EDITED BY

GEORGE GULLIVER, M.A., M.B. OXON., AND  
H. H. CLUTTON, M.A. CANTAB., F.R.C.S.,

*Will be Published immediately.*

It will contain contributions from Members of the Staff and others, together with the Statistical Reports of the Hospital, by the Medical and Surgical Registrars, to December 31st, 1887.

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OCTOBER, 1888.

|    |    |                                                    |
|----|----|----------------------------------------------------|
| 1  | M  | Introductory Address, 3 p.m. Annual Dinner.        |
| 2  | TU | Clinical Clerks and Dressers commence duty.        |
| 3  | W  |                                                    |
| 4  | TH |                                                    |
| 5  | F  |                                                    |
| 6  | S  |                                                    |
| 7  | §  | Nineteenth Sunday after Trinity.                   |
| 8  | M  |                                                    |
| 9  | TU |                                                    |
| 10 | W  | Last day for Notice for Public Health Exam., Univ. |
| 11 | TH | [Lond.                                             |
| 12 | F  |                                                    |
| 13 | S  | Last day for Certs. for M.B. Exam., Univ. Lond.    |
| 14 | §  | Twentieth Sunday after Trinity.                    |
| 15 | M  |                                                    |
| 16 | TU |                                                    |
| 17 | W  |                                                    |
| 18 | TH | St. Luke.                                          |
| 19 | F  |                                                    |
| 20 | S  |                                                    |
| 21 | §  | Twenty-first Sunday after Trinity.                 |
| 22 | M  |                                                    |
| 23 | TU |                                                    |
| 24 | W  |                                                    |
| 25 | TH |                                                    |
| 26 | F  |                                                    |
| 27 | S  |                                                    |
| 28 | §  | Twenty-second Sunday after Trinity. St. Simon and  |
| 29 | M  | Univ. Lond. M.B. Exam. [St. Jude.                  |
| 30 | TU |                                                    |
| 31 | W  |                                                    |

*The Registration and Museum Committees meet during this month.  
 The Primary Examinations of the Society of Apothecaries are held Quarterly,  
 and the Final every month.  
 First, Second, and Third Examinations of the Examining Board in England  
 are held this month.*

NOVEMBER, 1888.

|    |    |                                                                                      |
|----|----|--------------------------------------------------------------------------------------|
| 1  | TH | All Saints.                                                                          |
| 2  | F  |                                                                                      |
| 3  | S  |                                                                                      |
| 4  | §  | Twenty-third Sunday after Trinity.                                                   |
| 5  | M  | [Surgical Registrarships.                                                            |
| 6  | TU | Notice—30th, last day for applications for Medical and                               |
| 7  | W  | Last day for applications for House Offices, &c.*                                    |
| 8  | TH |                                                                                      |
| 9  | F  | Prince of Wales born, 1841.                                                          |
| 10 | S  |                                                                                      |
| 11 | §  | Twenty-fourth Sunday after Trinity.                                                  |
| 12 | M  |                                                                                      |
| 13 | TU |                                                                                      |
| 14 | W  | Meeting to appoint House Officers, &c.                                               |
| 15 | TH |                                                                                      |
| 16 | F  |                                                                                      |
| 17 | S  | Last day for Certs. for M.D. and M.S. Exams., Univ.<br>[Lond.                        |
| 18 | §  | Twenty-fifth Sunday after Trinity.                                                   |
| 19 | M  | Last day for Certs. for B.S. Exam., Univ. Lond.                                      |
| 20 | TU | Univ. Lond. M.B. Pass list published.                                                |
| 21 | W  | Univ. Lond. M.B. Honours Exam.                                                       |
| 22 | TH |                                                                                      |
| 23 | F  |                                                                                      |
| 24 | S  |                                                                                      |
| 25 | §  | Twenty-sixth Sunday after Trinity.                                                   |
| 26 | M  |                                                                                      |
| 27 | TU |                                                                                      |
| 28 | W  |                                                                                      |
| 29 | TH |                                                                                      |
| 30 | F  | Saint Andrew. Last day for applications for Medical<br>[and Surgical Registrarships. |

*Examinations for the Fellowship of the Royal College of Surgeons of England held this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

DECEMBER, 1888.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | S  |                                                       |
| 2  | §  | Advent Sunday.                                        |
| 3  | M  | Univ. Lond. M.D. and M.S. Exam. [B.S. Exam.           |
| 4  | Tu | House Officers, &c., commence duty. Univ. Lond        |
| 5  | W  | Last day for applications for Clinical Clerkships and |
| 6  | Th | [Dresserships.                                        |
| 7  | F  |                                                       |
| 8  | S  |                                                       |
| 9  | §  | Second Sunday in Advent.                              |
| 10 | M  | Univ. London Public Health Exam.                      |
| 11 | Tu |                                                       |
| 12 | W  | Meeting to appoint Clinical Clerks and Dressers.      |
| 13 | Th |                                                       |
| 14 | F  | Univ. Lond. M.D. List published. Last day for Certs.  |
| 15 | S  | [for Matriculation Univ. Lond.                        |
| 16 | §  | Third Sunday in Advent.                               |
| 17 | M  |                                                       |
| 18 | Tu |                                                       |
| 19 | W  | 1st Sessional Examination commences.                  |
| 20 | Th |                                                       |
| 21 | F  | Saint Thomas. Last day for Notice for Prel. Sci.      |
| 22 | S  | [(M.B.) Exam. Univ. Lond.                             |
| 23 | §  | Fourth Sunday in Advent.                              |
| 24 | M  |                                                       |
| 25 | Tu | CHRISTMAS DAY.                                        |
| 26 | W  | Saint Stephen.                                        |
| 27 | Th | Saint John.                                           |
| 28 | F  | Holy Innocents.                                       |
| 29 | S  |                                                       |
| 30 | §  | First Sunday after Christmas.                         |
| 31 | M  |                                                       |

*University of Cambridge First, Second, and Third M.B. Examinations are held this month.*

*Preliminary Examination in Arts of the Society of Apothecaries held this month.*

JANUARY, 1889.

|    |    |                                                                                                                 |
|----|----|-----------------------------------------------------------------------------------------------------------------|
| 1  | TU | Circumcision. Clinical Clerks and Dressers com-<br>[mence duty.                                                 |
| 2  | W  |                                                                                                                 |
| 3  | TH |                                                                                                                 |
| 4  | F  |                                                                                                                 |
| 5  | S  | Last Day for Certs. for Int. Med. Exam. Univ. Lond.                                                             |
| 6  | §  | Epiphany.                                                                                                       |
| 7  | M  |                                                                                                                 |
| 8  | TU |                                                                                                                 |
| 9  | W  |                                                                                                                 |
| 10 | TH |                                                                                                                 |
| 11 | F  |                                                                                                                 |
| 12 | S  |                                                                                                                 |
| 13 | §  | First Sunday after Epiphany.<br>Univ. Lond. Matriculation Examination.                                          |
| 14 | M  |                                                                                                                 |
| 15 | TU |                                                                                                                 |
| 16 | W  |                                                                                                                 |
| 17 | TH |                                                                                                                 |
| 18 | F  |                                                                                                                 |
| 19 | S  |                                                                                                                 |
| 20 | §  | Second Sunday after Epiphany.<br>Univ. Lond. Prelim. Scientific (M.B.) Exam. and<br>Intermd. Exam. in Medicine. |
| 21 | M  |                                                                                                                 |
| 22 | TU |                                                                                                                 |
| 23 | W  |                                                                                                                 |
| 24 | TH |                                                                                                                 |
| 25 | F  | Conversion of St. Paul.                                                                                         |
| 26 | S  |                                                                                                                 |
| 27 | §  | Third Sunday after Epiphany.                                                                                    |
| 28 | M  |                                                                                                                 |
| 29 | TU |                                                                                                                 |
| 30 | W  |                                                                                                                 |
| 31 | TH |                                                                                                                 |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Registration and Museum Committees meet during this month.*

FEBRUARY, 1889.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | F  |                                                       |
| 2  | S  |                                                       |
| 3  | §  | Fourth Sunday after Epiphany.                         |
| 4  | M  | Univ. Lond. Matric. List published.                   |
| 5  | TU |                                                       |
| 6  | W  | Last day for applications for House Offices, &c.*     |
| 7  | TH |                                                       |
| 8  | F  |                                                       |
| 9  | S  |                                                       |
| 10 | §  | Fifth Sunday after Epiphany. Queen Victoria married,  |
| 11 | M  | Univ. Lond. Classified Matric. List published. [1840. |
| 12 | TU |                                                       |
| 13 | W  | Univ. Lond. Prel. Sci. (M.B.) List published. Meeting |
| 14 | TH | [to appoint House Officers, &c.                       |
| 15 | F  |                                                       |
| 16 | S  |                                                       |
| 17 | §  | Septuagesima Sunday.                                  |
| 18 | M  |                                                       |
| 19 | TU | Univ. Lond. Int. Med. Pass List published.            |
| 20 | W  |                                                       |
| 21 | TH |                                                       |
| 22 | F  |                                                       |
| 23 | S  |                                                       |
| 24 | §  | Sexagesima Sunday. St. Matthias.                      |
| 25 | M  |                                                       |
| 26 | TU |                                                       |
| 27 | W  |                                                       |
| 28 | TH |                                                       |

\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.

MARCH, 1889.

|    |    |                                                      |
|----|----|------------------------------------------------------|
| 1  | F  |                                                      |
| 2  | S  |                                                      |
| 3  | §  | Quinquagesima Sunday.                                |
| 4  | M  |                                                      |
| 5  | TU | House Officers, &c., commence duty.                  |
| 6  | W  | Ash Wednesday. Last day for applications for         |
| 7  | TH | [Clinical Clerkships and Dresserships.               |
| 8  | F  |                                                      |
| 9  | S  |                                                      |
| 10 | §  | First Sunday in Lent. Prince of Wales married, 1863. |
| 11 | M  |                                                      |
| 12 | TU |                                                      |
| 13 | W  | Meeting to appoint Clinical Clerks and Dressers.     |
| 14 | TH |                                                      |
| 15 | F  |                                                      |
| 16 | S  |                                                      |
| 17 | §  | Second Sunday in Lent.                               |
| 18 | M  |                                                      |
| 19 | TU |                                                      |
| 20 | W  |                                                      |
| 21 | TH |                                                      |
| 22 | F  |                                                      |
| 23 | S  | Sessional Examination commences.                     |
| 24 | §  | Third Sunday in Lent.                                |
| 25 | M  | Annunciation. LADY DAY.                              |
| 26 | TU |                                                      |
| 27 | W  |                                                      |
| 28 | TH |                                                      |
| 29 | F  | [Reports for Solly Medal (1890).                     |
| 30 | S  | Registrar's Report for last year due. Last day for   |
| 31 | §  | Fourth Sunday in Lent.                               |

*Preliminary Examination in Arts of the Society of Apothecaries held this month.*

APRIL, 1889.

|    |    |                                             |
|----|----|---------------------------------------------|
| 1  | M  |                                             |
| 2  | TU | Clinical Clerks and Dressers commence duty. |
| 3  | W  |                                             |
| 4  | TH |                                             |
| 5  | F  |                                             |
| 6  | S  |                                             |
| 7  | §  | Fifth Sunday in Lent.                       |
| 8  | M  |                                             |
| 9  | TU |                                             |
| 10 | W  |                                             |
| 11 | TH |                                             |
| 12 | F  |                                             |
| 13 | S  |                                             |
| 14 | §  | Palm Sunday.                                |
| 15 | M  |                                             |
| 16 | TU |                                             |
| 17 | W  |                                             |
| 18 | TH |                                             |
| 19 | F  | Good Friday.                                |
| 20 | S  |                                             |
| 21 | §  | EASTER SUNDAY.                              |
| 22 | M  | Bank Holiday.                               |
| 23 | TU |                                             |
| 24 | W  |                                             |
| 25 | Th | St. Mark.                                   |
| 26 | F  |                                             |
| 27 | S  |                                             |
| 28 | §  | First Sunday after Easter. Low Sunday.      |
| 29 | M  |                                             |
| 30 | TU |                                             |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Examinations for the Mead and Cheselden Medals take place this month.*

*The Annual Inspection of the Museum and meeting of Museum Committee take place during this month.*

*The Registration Committee meets during this month*

MAY, 1889.

|    |    |                                                        |
|----|----|--------------------------------------------------------|
| 1  | W  | St. Philip and St. James. Summer Session commences.    |
| 2  | TH | [Last day for applications for House Offices, &c.*     |
| 3  | F  |                                                        |
| 4  | S  |                                                        |
| 5  | S  | Second Sunday after Easter.                            |
| 6  | M  |                                                        |
| 7  | TU |                                                        |
| 8  | W  | Meeting to appoint House Officers, &c.                 |
| 9  | TH |                                                        |
| 10 | F  |                                                        |
| 11 | S  |                                                        |
| 12 | S  | Third Sunday after Easter. First Stone of St. Thomas's |
| 13 | M  | [New Hospital laid by H.M. the Queen, 1868.            |
| 14 | TU |                                                        |
| 15 | W  |                                                        |
| 16 | TH |                                                        |
| 17 | F  | Last day for Certs. for Matric. Univ. Lond.            |
| 18 | S  |                                                        |
| 19 | S  | Fourth Sunday after Easter.                            |
| 20 | M  |                                                        |
| 21 | TU |                                                        |
| 22 | W  |                                                        |
| 23 | TH |                                                        |
| 24 | F  | Queen Victoria born, 1819.                             |
| 25 | S  |                                                        |
| 26 | S  | Fifth Sunday after Easter. Rogation Sunday.            |
| 27 | M  |                                                        |
| 28 | TU |                                                        |
| 29 | W  |                                                        |
| 30 | TH | Ascension Day. Holy Thursday.                          |
| 31 | F  |                                                        |

*Examinations for the Fellowship of the Royal College of Surgeons of England and Univ. Camb. Third M.B. Exam. held this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

JUNE, 1889.

|    |    |                                                                 |
|----|----|-----------------------------------------------------------------|
| 1  | S  |                                                                 |
| 2  | §  | Sunday after Ascension Day.                                     |
| 3  | M  |                                                                 |
| 4  | TU | House Officers, &c., commence duty.                             |
| 5  | W  | Last day for applications for Clinical Clerkships and           |
| 6  | TH | [Dresserships.                                                  |
| 7  | F  |                                                                 |
| 8  | S  |                                                                 |
| 9  | §  | WHIT SUNDAY.                                                    |
| 10 | M  | Bank Holiday. No Lectures.                                      |
| 11 | TU | St. Barnabas.                                                   |
| 12 | W  | Meeting to appoint Clinical Clerks and Dressers.                |
| 13 | TH |                                                                 |
| 14 | F  |                                                                 |
| 15 | S  | Last day for notice for Prel. Sci. (M.B.) Exam. Univ.<br>[Lond. |
| 16 | §  | TRINITY SUNDAY.                                                 |
| 17 | M  | Univ. Lond. Matric. Exam.                                       |
| 18 | TU |                                                                 |
| 19 | W  |                                                                 |
| 20 | TH | Queen's Accession. [Queen, 1871.                                |
| 21 | F  | New St. Thomas's Hospital opened by H. M. the                   |
| 22 | S  | Last day for Certs. for Int. Med. Exam. Univ. Lond.             |
| 23 | §  | First Sunday after Trinity.                                     |
| 24 | M  | St. John Baptist. Midsummer Day.                                |
| 25 | TU |                                                                 |
| 26 | W  |                                                                 |
| 27 | TH |                                                                 |
| 28 | F  | Queen Victoria crowned, 1833.                                   |
| 29 | S  | St. Peter.                                                      |
| 30 | §  | Second Sunday after Trinity.                                    |

*The Harveian Oration is delivered at the Royal College of Physicians annually in the month of June.*

*Doctor of Science Examination at London University takes place within the first 21 days of June.*

*Distribution of Prizes for past Sessions during this month.*

*Univ. Camb. First and Second M.B. Examinations are held within the first 14 days of June.*

*Preliminary Examination in Arts of the Society of Apothecaries held this month.*

JULY, 1889.

|    |    |                                                                                      |
|----|----|--------------------------------------------------------------------------------------|
| 1  | M  |                                                                                      |
| 2  | TU | Clinical Clerks and Dressers commence duty.                                          |
| 3  | W  |                                                                                      |
| 4  | TH |                                                                                      |
| 5  | F  |                                                                                      |
| 6  | S  |                                                                                      |
| 7 | § |  | Third Sunday after Trinity. |
| 8  | M  | Univ. Lond. Pass Matric. List published. Univ. Lond.<br>[Int. Med. Ex.               |
| 9  | TU |                                                                                      |
| 10 | W  | Last day for applications for House Offices, &c., for<br>[September.*                |
| 11 | TH |                                                                                      |
| 12 | F  |                                                                                      |
| 13 | S  |                                                                                      |
| 14 | §  | Fourth Sunday after Trinity.                                                         |
| 15 | M  | Univ. Lond. Prelim. Scientific (M.B.) Exam. Classi-<br>[fied Matric. List published. |
| 16 | TU |                                                                                      |
| 17 | W  | Meeting to appoint House Officers, &c., for September.                               |
| 18 | TH |                                                                                      |
| 19 | F  |                                                                                      |
| 20 | S  |                                                                                      |
| 21 | § |  | Fifth Sunday after Trinity. |
| 22 | M  |                                                                                      |
| 23 | TU |                                                                                      |
| 24 | W  |                                                                                      |
| 25 | TH | St. James. Sessional Examination commences.                                          |
| 26 | F  |                                                                                      |
| 27 | S  |                                                                                      |
| 28 | § |  | Sixth Sunday after Trinity. |
| 29 | M  |                                                                                      |
| 30 | TU |                                                                                      |
| 31 | W  |                                                                                      |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Registration and Museum Committees meet during this month.*

\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.

AUGUST, 1889.

|    |    |                                               |
|----|----|-----------------------------------------------|
| 1  | TH |                                               |
| 2  | F  |                                               |
| 3  | S  |                                               |
| 4  | §  | Seventh Sunday after Trinity.                 |
| 5  | M  | Bank Holiday.                                 |
| 6  | TU | Univ. Lond. Int. Med. Pass List published.    |
| 7  | W  | Univ. Lond. Prelim. Sci. Pass List published. |
| 8  | TH |                                               |
| 9  | F  |                                               |
| 10 | S  |                                               |
| 11 | §  | Eighth Sunday after Trinity.                  |
| 12 | M  |                                               |
| 13 | TU |                                               |
| 14 | W  |                                               |
| 15 | TH |                                               |
| 16 | F  |                                               |
| 17 | S  |                                               |
| 18 | §  | Ninth Sunday after Trinity.                   |
| 19 | M  |                                               |
| 20 | TU |                                               |
| 21 | W  |                                               |
| 22 | TH |                                               |
| 23 | F  |                                               |
| 24 | S  | St. Bartholomew.                              |
| 25 | §  | Tenth Sunday after Trinity.                   |
| 26 | M  |                                               |
| 27 | TU |                                               |
| 28 | W  |                                               |
| 29 | TH |                                               |
| 30 | F  |                                               |
| 31 | S  |                                               |

SEPTEMBER, 1889.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | §  | Eleventh Sunday after Trinity.                        |
| 2  | M  |                                                       |
| 3  | TU | House Officers, &c., commence duty. [Dresserships.    |
| 4  | W  | Last day for applications for Clinical Clerkships and |
| 5  | TH |                                                       |
| 6  | F  |                                                       |
| 7  | S  |                                                       |
| 8  | §  | Twelfth Sunday after Trinity.                         |
| 9  | M  |                                                       |
| 10 | TU |                                                       |
| 11 | W  |                                                       |
| 12 | TH |                                                       |
| 13 | F  |                                                       |
| 14 | S  |                                                       |
| 15 | §  | Thirteenth Sunday after Trinity.                      |
| 16 | M  |                                                       |
| 17 | TU |                                                       |
| 18 | W  | Meeting to appoint Clinical Clerks and Dressers.      |
| 19 | TH |                                                       |
| 20 | F  |                                                       |
| 21 | S  | St. Matthew.                                          |
| 22 | §  | Fourteenth Sunday after Trinity.                      |
| 23 | M  |                                                       |
| 24 | TU |                                                       |
| 25 | W  |                                                       |
| 26 | TH |                                                       |
| 27 | F  |                                                       |
| 28 | S  |                                                       |
| 29 | §  | Fifteenth Sunday after Trinity. Michaelmas Day.       |
| 30 | M  | Last day for Essay for Grainger Prize.                |

*Preliminary Examination in Arts of the Society of Apothecaries held this month.  
The Hospital Entrance Science Scholarships Examination takes place during  
the last week of this month.*

## LIST OF STUDENTS

WHO HAVE OBTAINED

## Honours in the Annual Examinations.

*w* refers to Winter and *s* to Summer Session.*The Addresses are those given at the time of Entry.*

- ABBOTT (F. C.),** Gorleston.  
*w* 1884-5. 1st Year Student, 1st Entrance Science Scholarship. The Wm. Tite Scholarship.  
*s* 1885. 1st Year Student, 1st Coll. Prize.  
*w* 1885-6. 2nd Year Student, The Peacock Scholarship.  
*w* 1886-7. 3rd Year Student, 2nd tenure of Peacock Scholarship with 1st College Prize.  
*w* 1887-8. 4th Year Student, The Cheselden Medal;  
 Treasurer's Gold Medal.
- ACLAND (T. D.),\*** Oxford.  
*w* 1877-8. 3rd Year Physical Society's Prize. Paper published in Hospital Reports, Vol. VIII.  
*w* 1878-9. 4th Year Student. The Mead Medal.
- ADDY (B.),** West Deeping, Lincolnshire.  
 1869. 1st Year Student, 1st College Prize; Physical Society's 1st Year's Prize.  
 1870. 2nd Year Student, 1st Coll. Prize; Physical Society's 2nd Year's Prize.  
 1871. 3rd Year Student, 1st Coll. Prize; Prosector's Prize;  
 Treasurer's Gold Medal.
- ALLINGHAM (W.),†** Bermondsey.  
 1852. Descriptive Anatomy, Hon. Cert.; Chemistry, Hon. Cert.  
 1853. Midwifery, Hon. Cert.  
 1854. Medicine, Hon. Cert.;  
 Descriptive Anatomy, Prize;  
 Midwifery, Hon. Cert.;  
 Physical Society's Essay, Prize;  
 Surgery, Prize;  
 Physiology, Hon. Cert.  
 1855. Medicine, Prize;  
 Descriptive Anatomy, Hon. Cert.;  
 Physiology, Hon. Cert.;  
 Clinical Medicine, President's Prize;  
 Clinical Medicine, Treasurer's Prize.
- ANDERSON (W.),‡** Clapham, Surrey.  
 1865. 1st Year Student, 3rd Coll. Prize.  
 1866. 2nd Year Student, 3rd Coll. Prize.
1867. 3rd Year Student, 1st Coll. Prize;  
 Physical Society's 3rd Year's Prize;  
 Cheselden Medal.
- ARMSTRONG (H. G.),** Reading.  
*s* 1872. 1st Year Student, Hon. Cert.  
*w* 1874. 3rd Year Student, 3rd Coll. Prize.
- ATKINSON (F. P.),** Kew.  
 1861. 1st Year Matriculation Examination—Classics and Mathematics, Hon. Cert.
- ATKINSON (J.),** Kirkby-Lonsdale.  
 1853. Chemistry, Hon. Cert.
- AVELING (C. T.),** Shacklewell.  
 1863. Matriculation Examination—Physics and Natural History, 1st College Prize;  
 1st Year Student, 1st College Prize.  
 1864. 2nd Year Student, 2nd College Prize.  
 1865. 3rd Year Student, 3rd College Prize.
- BAILEY (J. H. T.),** Greenwich.  
 1843. Materia Medica, Hon. Cert.
- BAIN (J.)**  
 1855. Midwifery, Hon. Cert.
- BALLANCE (C. A.),§** Lower Clapton.  
*w* 1875-6. 1st Year Student, Hon. Cert.  
*w* 1876-7. 3rd Year Student, 3rd College Prize, and Physical Society's 3rd Year's Prize;  
 1880. The Solly Medal and Prize.
- BANKS (A.),** Clapham.  
*w* 1887-8. 1st Year Student, 1st Coll. Prize.
- BARKER (F. R.),** Aldershot.  
*w* 1875. Prosector's Prize.
- BARRON (H. J.),** Guilford Street, Russell Square.  
*w* 1877-8. 2nd Year Student, Prosector's Prize.
- BARWELL (R.),||** Norwich.  
 1847. Medicine, Hon. Cert.;  
 Midwifery, Hon. Cert.  
 1848. Physical Society's Essay, Treasurer's Prize;  
 Physiology and Anatomy, Hon. Cert.,  
 Midwifery, Hon. Cert.;  
 Dresser's Surg. Repts., Hon. Cert.  
 1850. Clinical Medicine, Prize.
- formerly Demonstrator of Anatomy, and Surgical Registrar at St. Thomas's Hospital, late Examiner in Anatomy, Royal College of Physicians, Medical Officer to H.B.M. Legation in Japan, and Medical Director of the Japanese Naval Medical College, Tokio.
- § Assistant Surgeon for Diseases of the Ear, St. Thomas's Hospital. Assistant Surgeon to the West London Hospital. Late Surgical Registrar and Demonstrator of Anatomy at St. Thomas's Hospital.
- || Surgeon to Charing Cross Hospital.

\* Assistant Physician to, and Demonstrator of Minute Pathology at St. Thomas's Hospital. Assistant Physician, Brompton Hospital.

† Late Surgical Tutor, Surgeon to Great Northern Hospital, Surgeon to St. Mark's Hospital.

‡ Assistant Surgeon to, and Joint Lecturer on Anatomy at St. Thomas's Hospital. Member of the Board of Examiners for the Fellowship of the Royal College of Surgeons;

**BATESON (J. M.),** Kirkby-Lonsdale.  
1855. Chemistry, Hon. Cert.

**BATTLE (W. H.),\*** Hanworth, Lincolnshire.

s 1874. Hon. Cert.

w 1875. 2nd Year Student, 3rd College Prize.

w 1876-7. 3rd Year Student, The First Solty Medal and Prize.

**BEAL (P.),** Plymouth.

1844. Chemistry, 2nd Prize.

**BEARDSLEY (A.),** Shipley, Derby.

1843. Midwifery, 2nd Prize.

**BEDFORD (R. J.),†** Sleaford.

1858. Midwifery, Hon. Cert.

**BENWELL (H. D.),** Greenwich.

1843. Chemistry, 2nd Prize.

1845. Physiology and Anatomy, Medal.

1847. Clinical Medical Reports, Prize;  
Gen. Proficiency, Trea. Medal.

**BELL (C. N.),** Rochester.

1867. 3rd Year Student, 3rd Coll. Prize.

**BELL (J. V.),** Rochester.

1859. 1st Year Student, Treasurer's 2nd Prize; Matriculation Examination—Classics and Mathematics, Hon. Cert.

1860. 2nd Year Student, Hon. Cert.

1861. 3rd Year Student, 3rd Coll. Prize.

**BERNAYS (H. L.),** Chatham.

w 1873. Prosector's Prize.

**BERNAYS (A. V.),** Great Stanmore.

s 1876. 1st Year Student, Hon. Cert.

w 1880-81. 3rd Year Student, 1st Coll. Prize.

**BICKLE (L. W.),** St. Leonard's-on-Sea.

s 1878. 1st Year Student, 3rd Coll. Prize;

s 1879. 2nd Year Student, 1st Coll. Prize.

**BIDDLE (D.),** Wotton-under-Edge.

1860. 1st Year Student, Trea. Prize;

Matriculation Exam.—Prize.

1861. 2nd Year Student, Hon. Cert.

1862. 3rd Year Student, Hon. Cert.

**BIDWELL (H.),** Ely.

w 1883-4. 4th Year Student, qualified for Mead Medal.

**BIDWELL (L. A.),** Lee.

w 1885-6. 4th Year Student, qualified for Cheselden Medal.

**BIRTWELL (H. H.),** Enfield, Lancashire.

1865. 3rd Year Student, Hon. Cert.

**BLACK (J.),** Kentish Town.

w 1872. 2nd Year Student, Prosector's Prize.

**BLACK (W. S.),** Chesterfield, Derby.

1855. Midwifery, Hon. Cert.;

Medicine, Hon. Cert.

**BLACKETT (W. C.),** Durham.

1851. Descriptive Anatomy, Hon. Cert.

**BLADES (C. C.),**

1855. Midwifery, Hon. Cert.

**BONE (W.),** Camberwell.

1857. 1st Year Student, Trea. 1st Prize.

1858. 2nd Year Student, Trea. 1st Prize.

\* Assistant Surgeon to the Royal Free Hospital, and to the East London Hospital for Children and Women, Shadwell. Late Resident Assistant Surgeon, and Surgical Registrar, St. Thomas's Hospital.

† Late Assistant-Surgeon at the "Dreadnought" Hospital Ship.

**BONSER (J. H.),** Sutton-in-Ashfield.

1871. 3rd Year Student, 2nd Coll. Prize;  
Cheselden Medal.

**BOULGER (J.),** Gravesend.

1870. 1st Year Student, Sir Wm. Tite's Scholarship.

1871. 2nd Year, Sir W. Tite's Scholarship.

w 1872. 3rd Year, Sir W. Tite's Scholarship.

**BOX (C. R.),** Camberwell.

w 1885-6. 1st Year Student, 2nd Coll. Prize.

**BOWEN (E.),** Llyn Gwair, Pembroke.

1847. Descriptive and Surgical Anatomy,  
Hon. Cert.;

Materia Medica, Hon. Cert.

1848. Descriptive and Surgical Anatomy,  
Hon. Cert.;

Physiology and Anatomy, Ho. Cert.;

Botany, Hon. Cert.;

Comparative Anatomy, Hon. Cert.

**BOWN (J. Y.),** America.

1848. Descriptive and Surgical Anatomy,  
Hon. Cert.

**BOYCOTT (A. N.),** Rugeley.

w 1887-8. 4th Year Student, qualified for Cheselden Medal.

**BRAKE (J.),** Holt, Wilts.

1851. Matriculation Scholarship, Hon. Cert.;

Descriptive Anatomy, Hon. Cert.;

1st Year Student, Scholarship;

Chemistry, Hon. Cert.

1852. 2nd Year Student, Scholarship;

Physiology, Prize;

Materia Medica, Hon. Cert.

Botany, Hon. Cert.;

Medicine, Hon. Cert.

1853. 3rd Year Student, Scholarship;

Clinical Medicine, Trea. Prize;

Midwifery, Prize;

Forensic Medicine, Prize.

**BRISTOWE (J. S.),†** Camberwell.

1847. Medicine, Hon. Cert.;

Physiology and Anatomy, Hon. Cert.;

Descriptive and Surgical Anatomy,  
Prize.

1848. Descriptive and Surgical Anatomy,  
Hon. Cert.;

Physiology and Anatomy, Prize;

Practical Chemistry, Prize;

Botany, Prize;

Midwifery, Hon. Cert.;

Comparative Anatomy, Prize;

Surgery, Prize;

General Proficiency, Treasurer's Medal.

**BRITTON (T.),** Doncaster.

1861. 1st Year Student, Hon. Cert.

**BROCK (J.),** Northwich.

w 1872. 1st Year Student, 2nd Coll. Prize.

s 1872. Hon. Cert.

**BROCKATT (A. A.),** Denmark Hill.

w 1884-5. 4th Year Student, qualified for the Mead Medal.

**BROWN (F. G.),** London.

1860. 1st Year Student, Hon. Cert.

1861. 2nd Year Student, 3rd Coll. Prize.

1862. 3rd Year Student, 3rd Coll. Prize.

**BROWN (G. D.),** Croydon.

1851. Physiology, Hon. Cert.

† Physician to, and Joint Lecturer on Medicine at, St. Thomas's Hospital. Late Lecturer on General Pathology.

- Botany, Prize;  
Surgery, Hon. Cert.;
1852. Physiology, Hon. Cert. ;  
Physical Society's Essay, Treasurer's Prize ;  
Medicine, Hon. Cert. ;  
Pathology, Prize.
- BROWN (P. J. E.), Dorchester.**  
1848. Practical Midwifery, Hon. Cert.
- BUCKNILL (E. R.), Bedford.**  
1855. 1st Year Student, Scholarship ;  
Midwifery, Hon. Cert. ;  
Chemistry, Hon. Cert. ;  
Descriptive Anatomy, Hon. Cert. ;  
Materia Medica, Hon. Cert.
- BULL (J.), Norwood, Surrey.**  
1848. Midwifery, Hon. Cert.
- BURDEN (H.), Belfast.**  
w 1886-7. 1st Year Student, The William Tite Scholarship.  
s 1887. 1st Year Student, 2nd Coll. Prize.  
w 1887-8. 2nd Year Student, 2nd Coll. Prize.
- BUTLER (W.), Stoke Newington.**  
1845. Materia Medica, Hon. Cert.
- CAIGER (F. F.), Gloucester-st., S. W.**  
w 1879-80. 1st Year Student, 3rd Coll. Prize.  
w 1880-81. 2nd Year Student, 3rd Coll. Prize.  
w 1882-83. 4th Year, the Mead Medal.
- CANN (R. T.), Plymouth.**  
s 1882. 2nd Year Student. 1st Coll. Prize.  
s 1883. 3rd Year Student. 2nd Coll. Prize.
- CARPENTER (A.),\* Rothwell.**  
1848. Descriptive and Surgical Anatomy, Hon. Cert. ;  
Chemistry Prize ;  
Materia Medica, Hon. Cert. ;  
Matriculation Scholarship, Prize.  
1849. Physiology Hon. Cert. ;  
Midwifery, Hon. Cert. ;  
Descriptive Anatomy, 1st Prize ;  
Medicine, 2nd Prize.  
1850. Physiology, Hon. Cert. ;  
Descriptive Anatomy, Hon. Cert. ;  
Botany, Prize ;  
Medicine, Prize ;  
Surgery, Prize ; [Medal.  
General Proficiency, Treasurer's  
1851. (Accoucheur) Midwifery, Prize ;  
Essay on Chorea, Mr. N. Smith's Prize.  
1852. Surgical Reports, President's Prize ;  
Medical Reports, Dr. Roots' Prize ;  
Ophthalmic Reports, a Governor's Prize ;  
Clinical Medicine, Senior Prize.
- CARPENTER (A. B.), Croydon.**  
w 1876-7. 1st Year Student, Hon. Cert. ;
- CARPENTER (G. A.), Streatham.**  
w 1880-81. 1st Year Student, 3rd Coll. Prize.  
s 1881. 1st Coll. Prize.  
w 1881-2. 2nd Year Student, 3rd Coll. Prize.  
Prosecutor's Prize.
- CARR (J. T.), Bombay.**  
1844. Surgery, Prize.
- CASTLE (H.), Newport, I. of Wight.**  
w 1874-5. 1st Year Student, 2nd Coll. Prize.  
s 1875. 3rd College Prize.  
w 1876-7. Physical Society's 3rd Year's Prize.
- CAUDLE (A. W. W.), Henfield, Sussex.**  
1858. Clinical Medicine, Prize.
- CHA LDECOTT (C. W.), Dorking.**  
1849. Descriptive Anatomy, Hon. Cert.  
Chemistry, Hon. Cert. ;  
Materia Medica, 2nd Prize ;  
1st Year Student, Scholarship.  
1850. Physiology, Hon. Cert.  
Surgery, Prize.  
1851. Physiology, Prize ;  
Descriptive Anatomy, Hon. Cert. ;  
Medicine, Hon. Cert. ;  
Physical Society's Essay, Treasurer's Prize ;  
Surgery, Hon. Cert. ;  
General Proficiency, Treasurer's Silver Medal.
- CHALDECOTT (T. A.), Newington**  
1848. Descriptive Surgical Anatomy, Hon. Chemistry, Hon. Cert. ; [Cert. ;  
Botany, Hon. Cert. ;  
Materia Medica, Hon. Cert. ;  
Comparative Anat., Hon. Cert. ;  
Matriculation Scholarship, Prize ;  
Practical Chemistry, Hon. Cert.  
1849. Physiology, Hon. Cert. ;  
Midwifery, Hon. Cert. ;  
Surgery, 2nd Prize ;  
Medicine, Hon. Cert.  
1850. Physiology, Hon. Cert. ;  
Forensic Medicine, Prize ;  
Pathology, Prize ;  
Medicine, Hon. Cert. ;  
Surgery, Hon. Cert.
- CHAPMAN (C. E.), Preston.**  
1855. Midwifery, Hon. Cert. ;  
Materia Medica, Hon. Cert.  
1857. Clinical Assistant, Prize ;  
Physical Society's Essay, Prize.
- CHARPENTIER (A. E.).**  
1882-3. 4th Year, The Mead Medal Exam., Special Mention and Hon. Cert.
- CHERRY (A. H.), Clapham.**  
1845. Clinical Medicine, Hon. Cert.
- CHIPPERFIELD (W. N.), Reading.**  
1852. 1st Year Student, Scholarship ;  
Descriptive Anatomy, Prize.  
1853. 2nd Year Student, Scholarship.  
Physiology, Prize ;  
Descriptive Anatomy, Prize ;  
Midwifery, Prize ;  
Physical Society's Essay, Prize ;  
Medicine, Prize ;  
Surgery, Prize.  
1854. 3rd Year Student, Scholarship ;  
Medicine, Prize ;  
Descriptive Anatomy, Hon. Cert. ;  
Midwifery, Prize ;  
Physical Society's Essay, Treasurer's Prize ;  
Forensic Medicine, Prize ;  
Chemistry, Hon. Cert. ;  
Comparative Anatomy, Prize ;  
Pathology, Prize ;  
Surgery and Surgical Anatomy, Cheselden Medal ;  
Clinical Medicine, Treasurer's Prize,  
Physiology, Prize ; [Medal.  
General Proficiency, Treasurer's
- CLAPTON (E.),† Stamford.**  
1851. Matriculation Scholarship, Hon. Cert. ;  
1st Year Student, 1st Scholarship ;

\* Late Lecturer on State Medicine at St. Thomas's Hospital.

† Late Physician to, and Lecturer on Materia Medica at, St. Thomas's Hospital. Physician to the Magdalen Hospital.

- Descriptive Anatomy, Prize;  
Chemistry, Prize.
1852. 2nd Year Student, Scholarship;  
Physiology, Prize;  
Materia Medica, Prize;  
Botany, Prize;  
Medicine, Hon. Cert.
1853. 3rd Year Student, Scholarship;  
Physiology, Hon. Cert.; [Prize];  
Clinical Medicine, Treasurer's  
Midwifery, Hon. Cert.;  
Physical Society's Essay, Treas-  
urer's Prize;  
Medicine, Hon. Cert.;  
Forensic Medicine, Hon. Cert.;  
Chemistry, Hon. Cert.;  
Surgery, Hon. Cert.
1854. Ophthalmic Reports, Governor's  
Prize;  
Clinical Medicine, Mr. N. Smith's  
Prize.
- CLAPTON (W.), Stamford.**  
1855. Midwifery, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Materia Medica, Prize.
1856. Clinical Medicine, Prize.  
1853. Midwifery, Hon. Cert.
- CLARKE (A.), Dorking.**  
1856. 1st Year Student, Treasurer's 2nd  
Prize.
- CLARK (J. H.), Jamaica.**  
1867. 2nd Year Student, Physical Society's  
2nd Year's Prize.
- CLARKSON (J. W.), Surbiton.**  
w 1872. 2nd Year Student, 3rd Coll. Prize.  
w 1873. 3rd Year Student, 2nd Coll. Prize;  
Surgery and Surgical Anatomy,  
Hon. Cert.
- CLEGHORN (G.), Bedford.**  
1872. 3rd Year Student, Hon. Cert.
- CLUTTERBUCK (M. C.), Bath.**  
w 1886-7. 1st year Student, 2nd Entrance  
Science Scholarship.
- COGGINS (T.), Hayford, Woodstock.**  
1847. Chemistry, Hon. Cert.  
1848. Descriptive and Surgical Anatomy,  
Hon. Cert.;  
Midwifery, Hon. Cert.
1849. Midwifery, Hon. Cert.;  
Medicine, Hon. Cert.
1850. Surgical Reports, Prize;  
(Accoucheur) Midwifery, Hon. Cert.
- COLBY (W. T.), Malton, York.**  
1849. Descriptive Anatomy, Hon. Cert.;  
Midwifery, Hon. Cert.
- COLLIER (T. P.), Worship Square.**  
1847. Practical Midwifery, Prize.
- COMPLIN (E. J.), Charterhouse Sq.**  
1851. Clinical Medicine, Prize;  
Medical Case, President's Prize;  
Surgery, Hon. Cert.
1852. Midwifery, Hon. Cert.;  
Pathology, Hon. Cert.
- COOK (S. B.), Cape of Good Hope.**  
s 1883. 1st year Student, 2nd Coll. Prize.
- COOK (W.), Gainsboro'.**  
1844. Chemistry, Hon. Cert.;  
Materia Medica, Hon. Cert.
- COOKE (C. W.), Regent's Park.**  
w 1883-4. 1st year Student, 1st Entrance  
Science Scholarship.
- COOKE (J.), Stamford.**  
1855. Comparative Anatomy, Prize;  
Midwifery, Hon. Cert.;  
Physiology, Hon. Cert.
- COOPER (H. S.), Brightlingsea.**  
s 1887. 2nd Year Student, 2nd C. II Prize.
- COPELAND (W. H. L.), South Ken-  
sington.**  
w 1887-8. 4th Year Student, qualified for  
the Mead Medal.
- CORY (R.),\* Carlisle.**  
1870. Physical Society's 3rd Year's Prize.
- COUSINS (J. W.), Portsea.**  
1851. Descriptive Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.
1855. Surgery, Prize;  
Midwifery, Prize;  
Midwifery, Hon. Cert.
1856. Clinical Medicine, Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal.
- COWEN (P.), Kennington.**  
1862. 1st Year Student, 2nd Coll. Prize.  
1863. 2nd Year Student, 2nd Coll. Prize.  
1864. 3rd Year Student, 2nd Coll. Prize.
- COWEN (T. P.), Upper Holloway.**  
w 1884-5. 1st Year Student, † 1st and 2nd  
Coll. Prizes.  
s 1885. 1st Year Student, 2nd Coll. Prize.  
w 1885-6. 2nd Year Student, 1st Coll. Prize.  
s 1886. 2nd Year Student, 1st College Prize.  
w 1886-7. 3rd Year Student, 2nd Coll. Prize.  
w 1887-8. 4th Year Student, qualified for  
the Mead Medal.
- COX (E.), Maiden Newton, Dorset-  
shire.**  
1866. 1st Year Student, 3rd Coll. Prize.  
1868. 3rd Year Student, 2nd Coll. Prize.
- COXWELL (C. F.), Brighton.**  
1880. 4th Year Student, the Mead Medal.
- CRICK (S. A.), Cosby-hill, Leicester-  
shire.**  
s 1875. 1st Year Student, Hon. Cert.  
w 1875-6. Prosector's Prize.  
w 1876-7. 3rd Year Student, 3rd Coll. Prize.
- CROFT (J.),† Clapton.**  
1851. Descriptive Anatomy, Hon. Cert.  
1853. Midwifery, Hon. Cert.
- CROFTS (W. C.), Rowston, Lincoln.**  
1855. Surgery, Hon. Cert.;  
Midwifery, Hon. Cert.
- CROSBY (T. B.), Gosberton, Lincoln.**  
1851. Physiology, Prize;  
Descriptive Anatomy, Prize;  
Medicine, Prize;  
Surgery, Prize.
1852. Physiology, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Medicine, Hon. Cert.;  
Forensic Medicine, Prize;  
Practical Chemistry, Prize;  
Surgery, Hon. Cert.;  
Surgery and Surgical Anatomy,  
Bronze Cheselden Medal;  
Comparative Anatomy, Prize.
- CROSSMAN (J.), Redruth.**  
1871. Physical Society's 1st Year's Prize.  
1872. Physical Society's 2nd Year's Prize.  
1873. Physical Society's 3rd Year's Prize.

\* Assistant Obstetric Physician to, and  
Joint Lecturer on Forensic Medicine at,  
St. Thomas's Hospital.

† Member of Council Royal College of  
Surgeons. Surgeon to, and Special Lecturer  
on Clinical Surgery at, St. Thomas's Hos-  
pital; late Assistant Demonstrator of Ana-  
tomy.

**CROWDY (F. D.), Bath.**  
w 1884-5. 4th Year Student, the Mead Medal.

**DAVIES (D.), Carmarthenshire.**

1843. Chemistry, 1st Prize;  
Midwifery, Hon. Cert.;  
Materia Medica, Prize.  
1844. Medicine, Hon. Cert.;  
Physiology and Anatomy, Hon. Cert.  
1845. Clinical Surgical Reports, Medal.

**DAVIES (D. S.), Bristol.**

- 1875-6. Physical Society's 1st Year's Prize.

**DAY (W. H.), Norwich.**

1844. Surgery, Prize;  
Physical Society's Essay, Hon. Cert.;  
Dresser's Clinical Surgery, Prize.

**DECK (J. F.), Nelson, New Zealand.**

1860. 1st Year Student, 1st Coll. Prize.  
1861. 2nd Year Student, 1st Coll. Prize;  
Physical Society's Prize.  
1862. 3rd Year Student, 1st Coll. Prize;  
Physical Society's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.

**DICKERSON (S. H.), Hartest, Suffolk.**

1853. Physiology, Hon. Cert.;  
Materia Medica, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Medicine, Hon. Cert.

**DIXON (E. L.), Preston, Lancashire.**

1852. 1st Year Student, Scholarship;  
Chemistry, Hon. Cert.  
1853. 2nd Year Student, Scholarship;  
Physiology, Hon. Cert.;  
Materia Medica, Prize;  
Descriptive Anatomy, Hon. Cert.;  
Midwifery, Hon. Cert.;  
Botany, Prize;  
Medicine, Hon. Cert.  
1854. 3rd Year Student, Scholarship;  
Descriptive Anatomy, Hon. Cert.;  
Practical Chemistry, Prize;  
Physiology, Hon. Cert.

**DOBSON (N. C.),\* Holbeach, Lincolnshire.**

1865. 1st Year Student, 1st Coll. Prize.  
1866. 2nd Year Student, 1st Coll. Prize.  
1867. 3rd Year Student, 2nd Coll. Prize;  
A Prize and Hon. Cert. for Proficiency in Surgery and Surgical Anatomy at the Cheselden Medal Examination;  
Treasurer's Gold Medal.

**DRAKE (A. J.), Kingsclere, Hants.**

1870. 3rd Year Student, 1st Coll. Prize.

**DRAKE (C. H.), Kingsclere, Hants.**

1857. 1st Year Student, Hon. Cert.;  
1858. 2nd Year Student, Treasurer's 1st Prize;  
Clinical Medicine, 2nd Prize.  
1859. 3rd Year Student, Hon. Cert.;  
Surgery and Surgical Anatomy, Cheselden Medal;  
General Proficiency, Treasurer's Medal.

**DRAKE (T.), Kingsclere, Hants.**

1858. 2nd Year Student, Treasurer's 1st Prize;  
1859. 2nd Year Student, President's Prize.

\* Surgeon to the Bristol General Hospital and Lecturer on Surgery at the Bristol Medical School.

1860. 3rd Year, 1st College Prize;  
Surgery and Surgical Anatomy, Cheselden Medal;  
General Proficiency, Treasurer's Medal.

**DREW (G. F. A.), Plymouth.**

1848. Descriptive and Surg. Anat. Prize;  
Chemistry, Hon. Cert.;  
Botany, Prize;  
Comparative Anatomy, Hon. Cert.;  
Practical Chemistry, Prize;  
Gen. Proficiency, Hon. Cert.  
1849. Physiology, 2nd Prize;  
Midwifery, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Medicine, Hon. Cert.  
1850. Physiology, Prize;  
Descriptive Anatomy, Hon. Cert.  
Medicine, Hon. Cert.;  
Surgery, Hon. Cert.

**DUKES (C.),† Dalston.**

1865. 1st Year Student, Hon. Cert.  
1867. 3rd Year Student, Hon. Cert.;  
Prosecutor's Prize and Hon. Cert.

**DUNCAN (H.), London.**

- w 1852-3. 1st Year Student, 1st Entrance Science Scholarship, 1st Coll. Prize.  
w 1883-4. 2nd Year Student, Pro-ector's Prize.

**DUNCAN (W.),‡ Manchester.**

- w 1876-7. 1st Year Student, The William Tite Scholarship.  
s 1877. 1st College Prize.  
w 1877-8. 2nd Year Student, The Musgrove Scholarship.  
w 1877-8. 2nd Year Physical Society's Prize.  
s 1878. 1st College Prize.  
w 1878-9. 2nd Tenure Musgrove Scholarship.  
1st College Prize;  
3rd Year Physical Society's Prize;  
Grainger Testimonial Prize.  
1880. 4th Year Student, The Cheselden Medal.

The Treasurer's Medal.

- w 1881-2. The Solly Medal and Prize.

**DUNMAN (G.), Camberwell.**

1852. Chemistry, Hon. Cert.  
1854. Midwifery, Hon. Cert.

**DYER (F. J.), Blackheath.**

1847. Chemistry, Prize;  
Materia Medica, Hon. Cert.;  
1849. Physiology, Hon. Cert.;  
Midwifery, 2nd Prize;  
Medicine, Hon. Cert.

**ECCLES (C. H.), Brigg.**

- w 1884-5. 2nd Year Student, 1st Coll. Prize.  
s 1885. 2nd Year's Student, 1st Coll. Prize.  
w 1895-6. 3rd Year's Student, 1st Coll. Prize.  
s 1886. 3rd Year Student, 1st College Prize.

**EDDOWES (J. H.), Loughboro'.**

1843. Physiology and Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.;  
Comparative Anatomy, Prize.  
1844. Physiology and Anatomy, Hon. Cert.;  
Clinical Medical Reports, Silver Medal.  
1845. Clinical Medicine, Prize.

† Physician to Rugby School, and Senior Physician to Rugby Hospital.

‡ Assistant Obstetric Physician to Middlesex Hospital. Obstetric Physician Royal Hospital for Women and Children. Examiner in Midwifery, Examining Board in England.

**EDDOWES (W. D.), Loughboro'.**

1845. Descriptive and Surgical Anatomy, Prize.

**EDMONDS (S.), St. Helen's, Lancashire.**

1852. Chemistry, Hon. Cert.

1853. Midwifery, Hon. Cert.;  
Medicine, Hon. Cert.;  
Surgery, Hon. Cert.

1854. Surgery and Surgical Anatomy, Hon. Cert.;

Clinical Medicine, Treas. Prize;  
Clinical Medicine, Pres. Prize.

1855. Surgical Reports, Pres. Prize;  
Clinical Medicine, Dr. Roots' Prize.

**EDWARDS (S.), Littlehampton.**

1855. Midwifery, Hon. Cert.

**EDWARDS (V.), Woodbridge, Suffolk.**

1843. Surgery, Prize.

**ELBOROUGH (P. J.), Herne Bay.**

1845. Chemistry, Hon. Cert.

1847. Medicine, Hon. Cert.;

Midwifery, Prize.

1848. Medicine, Hon. Cert.;

Surgery, Hon. Cert.;

Surgical Report, Pres. Prize.

**ELLIS (J.), Portsca, Hants.**

1857. Clinical Assistant (Medicine), Hon. Cert.

**ELWIN (C. J.), London.**

1855. Practical Midwifery, Prize.

**EVANS (C. W. DE LACEY), Bangor.**

w 1876-7. 3rd Year Student, The Solly Prize and Hon. Cert.

**FAIRBANK (J.), Islington.**

1865. 1st Year Student, Hon. Cert.

1866. 2nd Year Student, Prosec. Prize.

**FARRANT (S.), Collumpton, Devon.**

1859. 2nd Year Student, Hon. Cert.

1860. 3rd Year Student, Hon. Cert.

**FAULKNER (R.), Camberwell.**

1844. Botany, Prize;

Clinical Medical Reports, Hon. Cert.

**FAWSLETT (F.), Surbiton.**

w 1883-4. 1st Year Student, 2nd Entrance Science Scholarship. The William Tite Scholarship.

s 1884. 1st Year Student, 1st Coll. Prize.

w 1884-5. 2nd Year Student, The Musgrove Scholarship.

w 1885-6. 3rd Year Student, 2nd tenure of Musgrove Scholarship, with 3rd Coll. Prize.

w 1886-7. 4th Year Student. The Cheselden Medal. Treasurer's Gold Medal.

**FELL (W.), Kensington.**

w 1878-9. 2nd Year Student Prosector's Prize.

**FENTON (H. A. H.), Westminster.**

w 1875-6. 1st Entrance Science Scholarship.

s 1876. 1st Year Student, 1st Coll. Prize.

**FERNIE (A.), Yeldon, Beds.**

1853. Physiology, Hon. Cert.;

Surgery, Hon. Cert.

**FERNIE (W. T.), Yeldon, Beds.**

1852. Practical Midwifery, Prize;

Midwifery, Hon. Cert.

**FISHER (T.), St. Michael's.**

s 1872. 1st Year Student, Hon. Cert.

s 1873. 2nd Year Student, 2nd Coll. Prize.

w 1874. 2nd Year Student, 3rd Coll. Prize.

w 1875. 3rd Year Student, Surgery and Surgical Anatomy, Prize, and Cert. of Hon.

**FISHER (J. H.), Exeter.**

w 1887-8. 1st Year Student, The William Tite Scholarship.

**FORD (G. W.), Cape of Good Hope.**

w 1880-81. 3rd Year Student, Prosector's Prize.

**FOWLER (J. T.), Winterton, Lincoln.**

1854. Chemistry, Hon. Cert.

1855. Botany, Hon. Cert.

**FOWLER (J.), Winterton, Lincoln.**

1859. 1st Year Student, Hon. Cert.

1860. 2nd Year Student, 2nd Coll. Prize.

1861. 3rd Year Student, 2nd Coll. Prize.

**FREEMAN (D.), Kennington.**

1859. Clinical Medicine, Prize.

**FREEMAN (A. J.), Southsea, Hants.**

1865. 3rd Year Student, Hon. Cert.

**FULTON (J. A.), Stockwell.**

1852. Botany, Hon. Cert.

1853. Practical Chemistry, Prize.

**FURNIVAL (F. H.), Nottingham.**

w 1878-9. 1st Year Student;

The Wm. Tite Scholarship.

**GARDNER (E. B.), London.**

1858. Matriculation Examination—Classics and Mathematics, Prize.

**GARTON (W.), St. Helier's.**

1870. 2nd Year Student, 2nd Coll. Prize.

Physical Society's 2nd Year's Prize.

1871. Physical Society's 3rd Year's Prize.

**GEORGE (C. F.), Kirton-on-Lindsay.**

1855. Midwifery, Hon. Cert.

1856. 2nd Year Student, Dr. Roots' Prize.

1857. 3rd Year Student, Hon. Cert.;

Surgery and Surgical Anatomy, Cheselden Medal.

**GERVIS (F. H.), Tiverton.**

1861. 1st Year Matriculation Scholarship.

— College Prize, 2nd Coll. Prize.

1862. 2nd Year Student, 1st Coll. Prize.

1863. 3rd Year Student, Hon. Cert. and

Physical Society's Prize.

**GERVIS (H.),\* Tiverton.**

1856. 1st Year Student, Treas. 1st Prize;

Matriculation Examination, Physics, &c., Prize.

1857. 2nd Year Student, Pres. Prize;

Physical Society's Essay, Prize.

1858. Clinical Assistant (Medicine), 2nd

Prize;

Physical Society's Essay, Prize;

General Proficiency, Treasurer's

Medal.

**GILES (F. W.), Henley-on-Thames.**

w 1875-6. 3rd Year Student, Hon. Cert.

**GIMBLETT (J.), Taunton.**

1860. 1st Year Student, Hon. Cert.

**GIMLETTE (G. H. D.), Southsea.**

s 1874. 1st Year Student, Hon. Cert.

w 1875-6. 3rd Year Student, Hon. Cert.

w 1876-7. Physical Society's 3rd Year's Prize.

**GLOVER (J. P.), Lansdowne Road.**

w 1881-2. 3rd Year Student, 3rd Coll. Prize.

\* Consulting Obstetric Physician to St. Thomas's Hospital, and to the Royal Maternity Charity. Examiner in Obstetric Medicine at the University of Cambridge and the Royal College of Physicians. Late Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, St. Thomas's Hospital.

**GODDARD (E.), London.**

1860. Matriculation Examination, Classics, &c., Prize.

**GODDARD (L.), London.**

1856 Matriculation Examination, Classics and Mathematics, Prize.

**GODFREY (A. E.), Northampton.**

s 1883. 2nd Year Student, 2nd Coll. Prize.  
w 1883-4. 3rd Year Student, 2nd Coll. Prize.

**GOODY (E. S.), Hampstead.**

w 1882-3. 2nd Year Student, 3rd Coll. Prize.  
s 1883. 2nd Year Student, 1st Coll. Prize.

**GOWLAND (W.), London.**

1845. Botany, Hon. Cert.

**GRABHAM (C.), Islington.**

1857. Matriculation Examination, Modern Languages, Prize.

**GRABHAM (G. W.),\* Islington.**

1855. Matriculation Examination, Scholarship;  
Midwifery, Hon. Cert.;  
Materia Medica, Hon. Cert.

**GRABHAM (J.), Rochford, Essex.**

1848. Descriptive and Surgical Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.;  
Botany, Hon. Cert.;  
Comparative Anatomy, Prize.

1850. Physiology, Hon. Cert.

1851. Physiology, Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.;  
Forensic Medicine, Prize;  
Surgery, Prize;  
Midwifery, Hon. Cert.

**GRABHAM (M. C.), Islington.**

1860. 2nd Year Student, Hon. Cert.

1861. 3rd Year Student, Hon. Cert.

**GREAVES (C. A.), Derby.**

1861. 1st Year Student, Treasurer's Prize;  
Matriculation Examination, Hon. Cert.

1862. 2nd Year Student, 2nd College Prize;  
Physical Society's Prize.

1863. 3rd Year Student, 1st College Prize;  
Physical Society's Prize;  
Cheselden Medal.

**GREEN (C. D.), New Cross.**

w 1879-80. 1st Year Student, The Wm. Tite Scholarship.

s 1880. 3rd College Prize.

w 1880-81. 1st College Prize.

s 1882. 1st Coll. Prize.

w 1882-3. 4th Year Student, qualified for Treasurer's Gold Medal.

**GREEN (J. T.), Peckham, Surrey.**

1865. 1st Year Student, Physical Society's Prize.

**GREEN (M. H.), Peckham.**

s 1873. 1st Year Student, 2nd College Prize.

**GROSE (S.), Boston, Lincoln.**

1853. 2nd Year Student, Hon. Cert.

1859. Physical Society's Essay Prize.

**GRIFFITHS (A. L.), London.**

1859. Midwifery, Hon. Cert.

**GULLIVER (G.),† Canterbury.**

w 1876-7. Physical Society's 2nd Year's Prize.

\* Government Inspector of Lunatic Asylums and Hospitals, New Zealand. Late Resident Medical Superintendent at Eariswood Asylum.

† Assistant Physician to, and Lecturer on Comparative Anatomy at, St. Thomas's Hospital. Assistant Physician to London Fever Hospital.

**GURNEY (R. A. F.), Rampton, Cambridge.**

1851. Practical Midwifery, Prize.

**HAGUE (S.),‡ Camberwell.**

1863. 1st Year Student, 2nd Coll. Prize.

**HAIG-BROWN (C. W.), Godalming.**

s 1873. 1st Year Student, 2nd Coll. Prize;  
w 1878-9. 2nd Year Student, 2nd College  
w 1880-81. The Cheselden Med. [Prize.

**HAMMERTON (E.), Elland, York.**

1857. 1st Year Student, Hon. Cert.

**HAMMOND (J. H.), Bridlington, York.**

1850. Medical Cases, President's Prize.

**HARDING (J. A.), Bath.**

1859. Clinical Medicine, 2nd Prize.

1860. Clinical Assistant (Medicine), 1st Prize.

**HARPER (R.), Brighton.**

1844. Clinical Surgical Reports, Hon. Cert.

1845. Physical Society's Essay, Prize;  
Dresser's Clinical Surgery, Prize.

**HARRIS (J. E.), Lavender Hill.**

w 1887-8. 1st Year Student, 1st Entrance  
Science Scholarship.

**HASLAM (W. F.),§ Reading.**

s 1876. 2nd Year Student, 1st College Prize.  
w 1877-8. The Cheselden Medal.

**HATCHETT (F. W.), S. Wales.**

s 1880. 1st Year Student, 1st College Prize.

**HATTON (G. S.), Newent, Gloucestershire.**

w 1876-7. 2nd Year Student, Prosecutor's

**HAWKINS (H. P.),|| Hawkhurst.**

w 1882-3. 1st Year Student, The William  
Tite Scholarship.

w 1883-4. 2nd Year Student. The Peacock  
Scholarship.

w 1884-5. 3rd Year Student, 2nd tenure of  
Peacock Scholarship and 1st  
Coll. Prize.

w 1885-6. 4th Year Student, qualified for  
Mead Medal.

**HEELS (R.), Carshalton.**

s 1877. 1st Year Student, 2nd College Prize.

s 1878. 2nd Year Student, 2nd Coll. Prize.

**HEFFERNAN (H. H.), Southsea.**

w 1883-4. 1st Year Student, 2nd Coll. Prize.

w 1886-7. 4th Year Student, qualified for  
Cheselden Medal.

**HEIGHTON (T.), Leicester.**

w 1873. 3rd Year Student, Hon. Cert.

**HEWLETT (T. J.), Harrow.**

1850. Matriculation Scholarship, Prize.

**HEYGATE (W. N.), Harslope, Bucks.**

1863. 2nd Year Student, Hon. Cert.

1864. 3rd Year Student, Hon. Cert.

**HICKS (J. W.),¶ Highgate New Town, N.**

1859. 1st Year Student, Treas.'s 1st Prize.

‡ Late Medical Registrar at St. Thomas's Hospital.

§ Assistant Surgeon to the Birmingham General Hospital; late Demonstrator of Anatomy at St. Thomas's Hospital.

|| Resident Assistant Physician to St. Thomas's Hospital; Radcliffe Travelling Fellow, Oxford, 1886.

¶ Late Lecturer on Botany at St. Thomas's Hospital; late Curator of the Museum.

- 1860 2nd Year Student, 1st College Prize ;  
Physical Society's Prize.
1861. 3rd Year Student, 1st College Prize ;  
Physical Society's Prize ;  
Cheselden Medal ;  
Treasurer's Gold Medal.
- HIGGINS (A. H.), Bernondsey.**  
1857. Midwifery, Hon. Cert.
- HILDITCH (J.), Sandbach, Cheshire.**  
1857. 1st Year Student, Hon. Cert.  
1858. Physical Society's Essay, Prize.  
1859. Essay on Neuralgia, Mr. N. Smith's  
Prize.
- HOBHOUSE (E.), Batcombe.**  
w 1885-6. 3rd Year Student, 2nd Coll. Prize.  
w 1886-7. 4th Year Student, qualified for  
for the Mead Medal.
- HODGES (H. B.).**  
1855. Midwifery, Hon. Cert.
- HODGES (R.), London.**  
1843. Physiology and Anatomy, Hon.  
Cert. ;  
Medicine, Hon. Cert. ;  
Clinical Medicine, Hon. Cert. ;  
Surgical Essay, Silver Medal.
- HO KAI, Hong Kong, China.**  
w 1875-6. 1st Year Student, Hon. Cert.  
s 1876. Hon. Cert.  
w 1876-7. 2nd Year Student, Hon. Cert.
- HOLBERTON (H. N.), Hampton.**  
w 1876-7. 2nd Entrance Science Scholarship,  
and 2nd College Prize.  
w 1877-8. 2nd Year Student, 1st Coll.  
Prize.
- HOOPER (J. H.), Upton Warren.**  
1858. 1st Year Student, Hon. Cert.  
1859. 2nd Year Student, College Prize.  
1860. 3rd Year Student, Hon. Cert.
- HOPTON (A. W.), Stockwell.**  
1851. Descriptive Anatomy, Hon. Cert.
- HOUSE (F. M.), Chilbolton, Hants.**  
w 1886-7. 4th Year Student, qualified for  
for the Mead Medal.
- HOWELL (T.), London.**  
1850. Practical Midwifery, Prize.
- HUBBARD (J. W.), Leicester.**  
1847. Clinical Medical Reports, Prize ;  
Medicine, Prize ;  
Physiology and Anatomy, Hon.  
Cert.  
Physical Society's Essay, Treas-  
urer's Prize.
- HULBERT (H. H.), Highworth.**  
w 1887-8. 4th Year Student, qualified for  
Cheselden Medal.
- HULL (W. W.), Acton.**  
w 1878-9. 2nd Entrance Science Schol-  
arship.  
w 1881-2. The Mead Medal.
- HUNT (J. A.), Derby.**  
w 1873. 1st Year Student, Hon. Cert.  
w 1874. Prosector's Prize.
- HUNTER (W. F.), Margate.**  
1859. 1st Year Student, Hon. Cert. ;  
Matriculation Examination in  
Classics and Mathematics, Prize ;  
Matriculation Examination in  
Modern Languages, Prize.  
1860. 2nd Year Student, 3rd Coll. Prize.  
1861. 3rd Year Student, Hon. Cert.
- HERMAN (H. B.), Bridgewater.**  
1853. Midwifery, Hon. Cert.
- HUTTON (J. S.), Sevenoaks.**  
w 1881-2. Entrance Science Scholarship.  
2nd Coll. Prize.  
s 1882. 1st Coll. Prize.  
s 1884. 3rd Year Student, † 1st and 2nd  
Coll. Prizes.  
w 1884-5. 4th Year Student, qualified for  
the Mead and Treasurer's Medals.
- ILES (D.), Fairford.**  
1863. 2nd Year Student, Hon. Cert.  
1864. 3rd Year Student, Hon. Cert.
- INGLIS (W. W.),\* Brixton Hill.**  
1864. 1st Year Student, 2nd Coll. Prize.  
1865. 2nd Year Student, 2nd Coll. Prize.  
1866. 3rd Year Student, 3rd Coll. Prize  
Cheselden Medal.
- IVES (R.).**  
1855. Midwifery, Hon. Cert.
- JACKSON (T. C.), Rotherhithe.**  
1844. Materia Medica, Hon. Cert.
- JACOB (E. H.), Winchester.**  
w 1875-6. Physical Society's 3rd Year's Prize.
- JACOBSON (T. E.), Sleaford, Lincoln.**  
1852. Practical Midwifery, Prize.
- JAFFÉ (C. S.), Hyde Park.**  
w 1887-8. 1st Year Student, † 2nd Coll.  
Prize.
- JAMES (C. H.), Oudh, India.**  
w 1887-8. Solly Medal and Prize.
- JARDINE (J. L.), Brixton.**  
1848. Physiology and Anatomy, Hon. Cert.  
1850. Medical Reports, Dr. Roots' Prize.
- JAY (M.), Wallaroo, South Australia.**  
w 1877-8. 1st Year Student, 3rd Coll. Prize.  
w 1878-9. 2nd Year Student, 2nd College  
Prize ;  
Prosector's Prize.
- JEFFERSON (T. J.), Hull.**  
1861. 2nd Year Student, Hon. Cert.  
1862. 3rd Year Student, Hon. Cert.
- JOHNSON (W. G.), Wandsworth.**  
1853. Chemistry, Hon. Cert.  
1854. Midwifery, Hon. Cert.  
1855. Comparative Anatomy, Prize ;  
Midwifery, Hon. Cert.
- JOHNSTON (G. D.).**  
w 1882-3. 4th Year, Cheselden Medal.
- JONES (S.),†Cricklewood, Middlesex.**  
1851. Matriculation Scholarship, Prize ;  
Descriptive Anatomy, Hon. Cert. ;  
Chemistry, Hon. Cert. ;  
1st Year Student, Scholarship.  
1852. 2nd Year Student, Scholarship ;  
Physiology, Hon. Cert. ;  
Descriptive Anatomy, Prize ;  
Botany, Hon. Cert.  
1853. Physiology, Hon. Cert. ;  
Descriptive Anatomy, Hon. Cert. ;  
3rd Year Student, Scholarship ;  
Materia Medica, Hon. Cert.
- JONES (Sydney H.), George Street,  
Hanover Square.**  
w 1881-2. 1st Year Student, Entrance  
Science Scholarship. The Wm.  
Tite Scholarship.

\* Late Medical Registrar at St. Thomas's  
Hospital.

† Member of Council, Royal College of  
Surgeons ; Surgeon to, and Joint Lecturer  
on Surgery at, St. Thomas's Hospital ; late  
Lecturer on Anatomy and Ophthalmic  
Surgery.

- w 1882-3. 2nd Year Student,  $\frac{1}{2}$  Musgrove Scholarship and 1st Coll. Prize combined.  
 Prosecutor's Prize.  
 w 1883-4. 3rd Year Student, 2nd tenure of  $\frac{1}{2}$  Musgrove Scholarship, with 1st College Prize.  
 s 1884. 3rd Year Student,  $\frac{1}{2}$  1st and 2nd Coll. Prizes.  
 w 1884-5. 4th Year Student, The Cheselden Medal.  
 Treasurer's Gold Medal.  
**JONES (A. O.), Islington.**  
 1862. 1st Year Student, Hon. Cert.  
**JONES (J.), Ilfracombe.**  
 1863. Matriculation Examination — Modern Languages and Modern History, College Prize.  
**JONES (W. Wansbrough),\* Leek.**  
 w 1877-8. 1st Year Student;  
 1st Entrance Science Scholarship;  
 £60.  
 The William Tite Scholarship.  
 w 1877-8. 1st Year Physical Society's Prize;  
 s 1878. 1st Year Student, 1st Coll. Prize;  
 w 1878-9. 2nd Year Student, The College Scholarship;  
 s 1879. 2nd Year Student, 2nd Coll. Prize;  
 w 1879-80. 3rd Year Student, 2nd tenure of Coll. Scholarship, and 1st Coll. Prize.  
 w 1880-81. The Mead Medal;  
 Treasurer's Gold Medal.  
**JOSEPH (S. W. J.), St. Leonards.**  
 1873. Physical Society's 2nd Year Prize.  
**KEELE (J. T.), South Lambeth.**  
 1853. Materia Medica, Hon. Cert.;  
 Midwifery, Hon. Cert.  
**KERAKOOSE (J.), East Indies.**  
 1854. Midwifery, Hon. Cert.  
**KEYWORTH (J. W.),† Aston, Berks.**  
 1848. Chemistry, Hon. Cert.;  
 Materia Medica, Prize;  
 General Proficiency, Hon. Cert.  
 1849. Physiology, Hon. Cert.;  
 Midwifery, 3rd Prize;  
 Medicine, Hon. Cert.;  
 Physical Society's Essay, Prize.  
 1850. Physiology, Hon. Cert.;  
 (Accoucheur) Midwifery, Hon. Cert.;  
 Ophthalmic Reports, a Governor's Prize;  
 Essay on Neuralgia, Mr. Newman Smith's Prize.  
 1851. Comparative Anatomy, Prize;  
 Clinical Medicine, Prize;  
 Surgical Reports, Prize;  
 Midwifery, Prize;  
 Medical Reports, Prize;  
 Pathology, Prize;  
 Physical Society's Essay, Prize.  
**KIDD (H. C.), Upper Norwood.**  
 w 1881-2. 1st Year Student, 3rd Coll. Prize.  
 w 1884-5. 4th Year Student, qualified for the Mead Medal.  
**KING (A.), Norwich.**  
 w 1886-7. 1st. Year Student, 1st Coll. Prize.  
 s 1887. 1st Year Student, 1st Coll. Prize.  
**KNAGGS (R. H. E.), Trinidad, W. Indies.**  
 w 1875-6. Prosecutor's Prize.

\* Radcliffe Travelling Fellow, Oxford, 1880. Late Resident Medical Officer, Barnes Convalescent Hospital, Manchester.

† Late Lecturer on Physiology at Sydenham College, Birmingham.

- LAKE (W. W.), Ilford, Essex.**  
 1873. Physical Society's 1st Year's Prize.  
**LAKE (R.), Dover.**  
 w 1881-2. 2nd Year Student, Prosecutor's Prize.  
 w 1883-4. 4th Year Student, qualified for Cheselden Medal.  
**LANGLEY (R. J.), Tilehurst, Reading.**  
 w 1886-7. 4th Year Student, qualified for Cheselden Medal.  
**LANKESTER (A. C.), Leicester.**  
 w 1885-6. 1st Year Student, 1st Coll. Prize.  
 w 1886-7. 2nd Year Student,  $\frac{1}{2}$  1st and 2nd College Prizes.  
**LANKESTER (H.), Poole, Dorset.**  
 1850. 1st Year Student, Scholarship;  
 Descriptive Anatomy, 1st Prize;  
 Chemistry, Prize.  
 1851. Physiology, Prize;  
 Materia Medica, Prize;  
 Descriptive Anatomy, Hon. Cert.;  
 Botany, Hon. Cert.;  
 Medicine, Prize;  
 Physical Society's Essay, Prize;  
 Surgery, Hon. Cert.  
 1852. 3rd Year Student, Scholarship;  
 Physiology, Hon. Cert.;  
 Descriptive Anatomy, Hon. Cert.;  
 Medical Cases, President's Prize;  
 Medicine, Prize;  
 Surgery, Prize;  
 Surgery and Surgical Anatomy Cheselden Medal;  
 General Proficiency, Treasurer's Medal.  
 1853. Surgical Essay, President's Prize.  
**LANKESTER (H. H.), Leicester.**  
 w. 1880-81. Entrance Science Scholarship.  
 1st Year Student 2nd Coll. Prize.  
 w 1881-2. 2nd Year Student, The College Scholarship Two Years.  
**LAVAR (H.)**  
 1855. Midwifery, Hon. Cert.  
**LAVAR (A. H.), Rayleigh.**  
 1870. 1st Year Student, 3rd Coll. Prize.  
 1871. 2nd Year Student, 2nd Coll. Prize.  
 w 1872. 3rd Year Student, 2nd Coll. Prize,  
 Cheselden Medal.  
**LAWSON (R.), St. Andrews, N.B.**  
 w 1880-81. 1st Entrance Science Scholarship.  
 1st Year Student, The Wm. Tite Scholarship.  
 s 1881. 2nd Coll. Prize.  
 w 1881-2. 2nd Year, 2nd Coll. Prize.  
 w 1882-3. 3rd Year, 2nd Coll. Prize.  
 w 1883-4. 4th Year Student, The Cheselden Medal;  
 Treasurer's Gold Medal.  
**LAXTON (T. L.), Stamford.**  
 w 1876-7. 2nd Year Student, Prosecutor's Prize.  
**LEDGER (M.), London.**  
 1845. Dresser's Clinical Surgery, Prize.  
**LEES (J.),‡ Wolverhampton.**  
 1859. 1st Year Student, Hon. Cert.;  
 1861. 3rd Year Student, Hon. Cert.;  
 Physical Society's Prize.  
**LEESON (T.), Snaith, York.**  
 1847. Medicine, Hon. Cert.;  
 Surgery, Prize;  
 Physiology and Anatomy, Hon. Cert.;

‡ Late Demonstrator of Morbid Anatomy at St. Thomas's Hospital.

- Descriptive and Surgical Anatomy,  
Hon. Cert. ;  
Midwifery, Hon. Cert.
1848. Descriptive and Surgical Anatomy,  
Hon. Cert. ;  
Physiology and Anatomy, Hon.  
Cert. ;  
Medicine, Hon. Cert. ;  
Midwifery, Prize.
- LE GROS (J.), Jersey.**  
1844. Medicine, Hon. Cert. ;  
Midwifery, 1st Prize.  
1845. Clinical Medical Reports, Medal ;  
Medicine, Hon. Cert. ;  
Dresser's Clinical Surgery, Prize.
- LEREW (F. W.), Maida Vale.**  
s 1876. 1st Year Student, Hon. Cert.
- LITTELJOHN (S. G.), Falmouth,  
Jamaica.**  
1865 1st Year Student, Hon. Cert.
- LOCOCK (H. S.), Blackheath.**  
1848. Descriptive and Surgical Anatomy,  
Hon. Cert. ;  
Physiology and Anatomy, Hon.  
Cert. ;  
Midwifery, Hon. Cert.  
1849. Physiology, Hon. Cert.
- LONGSTAFF (G. B.), Wandsworth.**  
w 1873-4. 1st Year Student, 2nd Coll. Prize.  
s 1874. 1st Coll. Prize ;  
Physical Society's 1st Year's Prize ;  
s 1875. 2nd Year Student, 2nd Coll. Prize.  
w 1875-6. 3rd Year Student, 1st Coll. Prize.  
w 1876-7. 4th Year Student, Mead Medal.
- LOVELL (C. P.), Hyde Park.**  
w 1886-7. 1st Year Student, 1st Entrance  
Science Scholarship.  
w 1887-8. 2nd Year Student, The Peacock  
Scholarship.
- LUARD (H. B.), Aveley, Essex.**  
s 1886. 3rd Year Student, 2nd Coll. Prize.  
w 1886-7. 4th Year Student, qualified for  
the Mead Medal.
- LUSH (W. H.), Devizes.**  
w 1872. 2nd Year Student, Prosector's  
Prize.
- LUSH (J. S.), West Lavington.**  
s 1873. 1st Year Student, 3rd Coll. Prize.
- MACEVOY (H. J.), Chantilly.**  
w 1884-5. 3rd Year Student, † 2nd and 3rd  
College Prizes.  
s 1885 3rd Year Student, † 1st and 2nd Coll.  
Prizes.  
w 1885-6. 4th Year Student, Bronze Mead  
Medal.
- MACKENZIE (H. W. G.),\* Edinburgh.**  
w 1882-3. 3rd Year Student, 3rd Coll. Prize.  
s 1883. 3rd Year Student, 1st Coll. Prize.  
w 1883-4. 4th Year Student, The Mead  
Medal.
- MACMURDO (H. H.), New Broad  
Street.**  
1847. Chemistry, Hon. Cert.  
1849. Midwifery, Hon. Cert.
- MANBY (W. G.), Barking, Essex.**  
1851. Descriptive Anatomy, Hon. Cert.
- MARCH (H. C.), Newbury.**  
1858. 1st Year Student, Treasurer's 2nd  
Prize.  
1859. 2nd Year Student, Hon. Cert.  
1860. 3rd Year Student, Hon. Cert.
- MARTIN (C. J.), Dalston.**  
w 1884-5. 1st Year Student, 2nd Entrance  
Scholarship.
- MASON (M. T.), Newington.**  
1845. Practical Midwifery, Hon. Cert.
- MAYBURY (A. C.), Frimley, Surrey.**  
1865. 3rd Year Student, Hon. Cert.
- MAYBURY (W. A.), Frimley, Surrey.**  
1867. 1st Year Student, 3rd College Prize.
- MAYBURY (H. M.), Frimley, Surrey.**  
1869. 1st Year Student, 2nd Coll. Prize ;  
1871. 3rd Year Student, 3rd Coll. Prize.
- MAYBURY (A. V.), Frimley.**  
1870. 1st Year Student, 2nd Coll. Prize.  
1871. 2nd Year Student, 1st Coll. Prize.  
w 1872. 3rd Year Student, 1st Coll. Prize ;  
Treasurer's Gold Medal.
- MAYNARD (J. C. M.)**  
1855. Midwifery, Hon. Cert.
- MEADOWS (H.), Leicester.**  
1867. 1st Year Student, The William  
Tite Scholarship ;  
Phys. Soc. 1st Year's Prize.  
1868. 2nd Year, Tite Scholarship ;  
Phys. Soc. 2nd Year's Prize.
- MILLER (B.), London.**  
1845. Midwifery, Hon. Cert. ;  
Practical Midwifery, Prize ;  
Clinical Medicine, Prize.
- MILNE (C. W.), Aberdeen.**  
1865. 1st Year Student, Hon. Cert.
- MITCHELL (J.), Leicester.**  
1866. 1st Year Student, 2nd Coll. Prize ;  
Phys. Society's 1st Year's Prize.  
1867. 2nd Year Student, 2nd Coll. Prize.  
1868. 3rd Year Student, 2nd Coll. Prize.
- MONEY (F. J.), Offham, Kent.**  
1849. Descriptive Anatomy, 2nd Prize ;  
Chemistry, Prize ;  
Materia Medica, 1st Prize ;  
Matriculation Scholarship, Prize ;  
1st Year Student Scholarship.  
1850. Physiology, Prize ;  
Comparative Anatomy, Prize ;  
Descriptive Anatomy, Prize ;  
Medicine, Prize ;  
Surgery, Hon. Cert.  
1851. Descriptive Anatomy, Hon. Cert. ;  
Midwifery, Prize ;  
Medicine, Prize ;  
Physical Society's Essay, Prize ;  
Surgery, Prize ;  
Surgery and Surgical Anatomy,  
Cheselden Medal ;  
General Proficiency, Treasurer's  
Gold Medal.
- MONTAGUE (A. J. H.), Wandsworth  
Road.**  
w 1884-5. 4th Year Student, qualified for  
the Mead Medal.
- MORETON (J. E.), Marton, Cheshire.**  
1850. 1st Year Student, Scholarship ;  
Descriptive Anatomy, Hon. Cert. ;  
Chemistry, Hon. Cert.  
1851. Materia Medica, Hon. Cert. ;  
Botany, Hon. Cert. ;  
1852. Physiology, Prize ;  
Descriptive Anatomy, Prize ;  
Physical Society's Essay, Prize ;  
Medicine, Prize ;  
Surgery, Prize ;  
2nd Year Student, Scholarship.

\* Medical Registrar at, late Resident As-  
sistant Physician to, St. Thomas's Hospital.

1853. 3rd Year Student, Scholarship; Physiology, Prize; Clinical Medicine, Pres. Prize; Clinical Medicine, Treas. Prize; Clinical Medicine, Mr. N. Smith's Prize; Descriptive Anatomy, Hon. Cert.; Midwifery, Hon. Cert.; Ophthalmic Surgery, Prize; Medicine, Prize; Forensic Medicine, Hon. Cert.; Surgery, Hon. Cert.; Surgery and Surgical Anatomy, Cheselden Medal; G. n. Proficiency, Treas. Medal.
1851. Clinical Med., Dr. Roots' Prize; Pathology, Hon. Cert.
- MORETON (T.)**, Marton, Cheshire.  
1857. 1st Year Student, Treasurer's 2nd Prize; Matriculation Examination, Classics and Mathematics, Prize.  
1858. Clinical Medicine, Prize.  
1859. 3rd Year Student, Hon. Cert.; Clinical Medicine, Hon. Cert.
- MORGAN (S.)**, London.  
1852. Descriptive Anatomy, Hon. Cert.  
1853. Midwifery, Hon. Cert.  
1854. Midwifery, Hon. Cert.; Forensic Medicine, 2nd Prize.
- MORRIS (C. K.)**, Spalding, Lincolnshire.  
w 1875. Prosector's Prize.
- MORTON (J.)**, Holbeach, Lincoln.  
1861. 1st Year Student, Hon. Cert.  
1862. 2nd Year Student, Hon. Cert.  
1863. 3rd Year Student, Hon. Cert.
- MOXON (H. M.)**, Brighsham.  
1871. Prosector's Prize.
- MUSSON (W. E.)**, Birkholme, Lincoln.  
1850. Matriculation Scholarship, Prize; Descriptive Anatomy, Hon. Cert.  
1851. Physiology, Hon. Cert.; Comparative Anatomy, Hon. Cert.; Medicine, Hon. Cert.
- NEWBY (C. H.)**,\* London.  
1870. Prosector's Prize.
- NEWSHOLME (A.)**, Bradford.  
w 1875-6. 1st Year Student, 1st Coll. Prize.  
w 1876-7. 2nd Year Student, 1st College Scholarship.  
s 1877. Ditto 1st Coll. Prize.  
w 1877-8. 3rd Year Student, The "College Scholarship," 1st Coll. Prize.
- NEWTH (A. H.)**, Kennington, Surrey.  
1865. 1st Year Student, Hon. Cert.
- NICHOL (F. E.)**, Roupell Park.  
w 18-4-5. 4th Year Student, qualified for the Cheselden Medal.
- NICHOL (R.)**, Camberwell.  
1814. Chemistry, 1st Prize; Materia Medica, Prize. [Cert.;  
1845. Physiology and Anatomy, Hon. Botany, Prize; Comparative Anatomy, Prize.
- NICHOLSON (F. W.)**, Putney.  
s 1877. 1st Year Student, 3rd Coll. Prize.  
w 1877-8. 2nd Year Student, Prosector's Prize.
- NICHOLSON (J. F.)**,† Brigg, Lincoln.  
w 1873. 1st Year Student, 1st Coll. Prize.  
s 1873. 1st Year Student, 1st Coll. Prize.  
w 1874. 2nd Year Student, 1st Coll. Prize.  
s 1874. Ditto 1st Coll. Prize.  
w 1875. 3rd Year Student, 1st Coll. Prize; Cheselden Medal; Mead Medal; Treasurer's Gold Medal.
- O'CALLAGHAN (C.)**, Killarney.  
1847. Chemistry, Hon. Cert.; Materia Medica, Prize.  
1848. Medical Reports, President's Prize; Physiology and Anat., Hon. Cert.; Midwifery, Hon. Cert.; Practical Midwifery, Prize; Forensic Medicine, Prize; Physical Society's Essay, Prize.  
1849. Physical Society's Essay, Treasurer's Prize; Resident Accoucheur's Report, Prize.
- ORANGE (W.)**,‡ Torquay.  
1854. Midwifery, Hon. Cert.  
1856. Midwifery, Hon. Cert.
- ORD (G. R.)**, Brixton.  
1858. Midwifery, Hon. Cert.
- ORD (W. M.)**,§ Brixton.  
1853. Matriculation Examination, Scholarship; 1st Year Student, Scholarship; Descriptive Anatomy, Prize; Chemistry, Prize.  
1854. 2nd Year Student, Scholarship; Medicine, Prize; Materia Medica, Prize; Descriptive Anatomy, Hon. Cert.; Midwifery, Hon. Cert.; Surgery, Hon. Cert.; Physiology, Prize.  
1855. 3rd Year Student, Scholarship; Surgery and Surgical Anatomy, Cheselden Medal; Forensic Medicine, Prize; Pathology, Prize; Practical Chemistry, Prize; Medicine, Hon. Cert.; Descriptive Anatomy, Hon. Cert.; Physiology, Prize; General Proficiency, Treasurer's Medal.  
1856. Registrar, Prize.
- ORD (W. W.)**, Brook Street.  
s 1834. 1st Year Student, 2nd Coll. Prize.  
w 1834-5. 2nd Year Student, † 2nd College Prize.  
w 1836-7. 4th Year Student, Mead Medal.
- OSBORN (S.)**,|| Brixton.  
1870. Physical Society's 2nd Year's Prize.

† Physician to the Hull General Infirmary.

‡ Late Resident Medical Superintendent at Broadmoor Asylum.

§ Physician to, and Joint Lecturer on Medicine at, St. Thomas's Hospital. Late Lecturer on Comparative Anatomy, Physiology, and Practical Physiology.

|| Assistant Surgeon to the Hospital for Women, Sobo Square. Late Surgical Registrar at St. Thomas's Hospital.

\* Late Surgical Registrar at St. Thomas's Hospital.

- OUGHTON (T.), London.**  
1858. Clinical Medical Assistant, 1st Prize.
- OZANNE (C. H.), Guernsey.**  
1844. Descriptive and Surgical Anatomy, Prize.
- OZANNE (J.), Guernsey.**  
1843. Physiology and Anatomy, Cheselden Medal;  
Comparative Anatomy, Hon. Cert.
1844. Medicine, Prize;  
Midwifery, 2nd Prize;  
Surgery, Hon. Cert.;  
Physical Society's Essay, Prize;  
Clinical Surgical Reports, Silver Medal.
- PAGE (W. H.), Cheltenham.**  
s 1872. 1st Year Student, Hon. Cert.  
w 1873. 3rd Coll. Prize.
- PALMER (M. H. C.), Newbury, Berks.**  
1870. Physical Society's 2nd Year's Prize.  
1872. Physical Society's 3rd Year's Prize.
- PARSONS (F. G.), Lee, Kent.**  
w 1882-3. 2nd Year, Prosector's Prize.  
w 1886-7. 6th Year, Grainger Testimonial Prize.
- PEARCE (G.), Salisbury.**  
1860. 1st Year Student, 2nd Coll. Prize.  
1861. 2nd Year Student, 2nd Coll. Prize.
- PEEK (F. H.), Diss, Norfolk.**  
s 1872. 1st Year Student, 1st Coll. Prize.  
s 1873. The William Tite Scholarship.  
w 1874. 2nd Year Wm. Tite Scholarship.
- PENBERTHY (J.), Redruth.**  
1854. 1st Year Student, Scholarship;  
Descriptive Anatomy, Prize;  
Chemistry, Hon. Cert.
1855. 2nd Year Student, Scholarship;  
Midwifery, Hon. Cert.;  
Botany, Prize;  
Descriptive Anatomy, Hon. Cert.
- PERN (A.), Winchester, Hampshire.**  
1865. 1st Year Student, Hon. Cert.
- PHILLIPS (G. G.), Newcastle Emlyn.**  
1859. 2nd Year Student, Hon. Cert.  
1860. 3rd Year Student, 3rd Coll. Prize.
- PICKFORD (J. K.), Brixton.**  
w 1872. 1st Year Student, 3rd Coll. Prize.  
s 1872. Hon. Cert.
- PIETERSEN (J.), Cape of Good Hope.**  
w 1883-4. Solly Medal and Prize.
- PIKE (W. R.), Leicester.**  
1868. Physical Society's 1st Year's Prize.
- PIKE (J. B.), Leicester.**  
w 1872. 2nd Year Student, Hon. Cert.  
w 1873. 3rd Year Student, Hon. Cert.
- PLOWMAN (R.), Bridgewater, Somst.**  
1862. 1st Year Student, Hon. Cert.  
1863. 2nd Year Student, Hon. Cert.  
1865. 3rd Year Student, Hon. Cert.
- POLLARD (F.), Taunton, Somerset.**  
1865. 1st Year Student, 2nd Coll. Prize.  
1866. 2nd Year Student, 2nd Coll. Prize;  
Physical Society's 2nd Year's Prize.
1868. 3rd Year Student, 1st Coll. Prize;  
Physical Society's 3rd Year's Prize;  
Cheselden Medal.
- POTTER (H. P.),\* Denmark Hill.**  
w 1872. 1st Year Student, Hon. Cert.  
s 1872. 3rd College Prize.  
w 1873. 2nd Year Student, 2nd Coll. Prize;  
Prosector's Prize.
- w 1874. 3rd Year Student, 1st Coll. Prize;  
Cheselden Medal;  
Hon. Cert. for Gen. Proficiency.  
1875. Grainger Testimonial Prize.
- POYNDER (G. F.), Clapham.**  
1872. Phys. Society's 1st Year's Prize.  
1874. Phys. Society's 3rd Year's Prize.
- PURKISS (A.), Kennington.**  
w 1875-6. 1st Year Student, Hon. Cert.  
s 1876. Hon. Cert.
- PURVIS (J. P.), Blackheath.**  
1861. 1st Year's Student, Hon. Cert.;  
Matriculation Examination, Hon. Cert.
1862. 2nd Year Student, Hon. Cert.  
1863. 3rd Year Student, Hon. Cert.
- RAINBOW (F.), Lower Norwood.**  
1864. 1st Year Student, Hon. Cert.  
1865. 2nd Year Student, 3rd Coll. Prize.  
1866. 3rd Year Student, 2nd Coll. Prize.
- RAYNER (H.),† Hythe, Kent.**  
1862. Matriculation Examination—Physics  
and Natural History, Hon. Cert.;  
1st Year Student, 1st Coll. Prize.
1863. 2nd Year Student, 1st Coll. Prize.  
1864. 3rd Year Student, Hon. Cert.;  
Hon. Cert. for the Cheselden Medal.
- RELTON (B.), Ealing.**  
1880. 2nd Entrance Science Scholarship.
- RICHARDSON (C. S.), Greenwich.**  
1851. Surgery, Hon. Cert.  
1852. Midwifery, Prize.
- RICHARDSON (L.), Greenwich.**  
1848. General Pathology, Prize.
- RIDGE (J. J.), Horsleydown.**  
1864. 1st Year Student, The William  
Tite Scholarship.
1865. 2nd Year of Tite's Scholarship;  
Physical Society's 2nd Year's Prize;  
Prosector's Prize.
1866. The Grainger Testimonial Prize.  
1868. 3rd Year Tite Scholarship;  
Hon. Cert. for Proficiency in  
Surgery and Surgical Anatomy;  
Treasurer's Gold Medal.
- ROBERTS (E. A.), Birmingham.**  
w 1884-5. 1st Year Student, † 1st and 2nd  
College Prizes.  
s 1887. 3rd Year Student, 2nd Coll. Prize.
- ROBINSON (H. B.),‡ Lower Norwood.**  
s 1881. 2nd Year Student, 1st Coll. Prize.
- ROE (A. D.), Eccles.**  
w. 1880-81. 3rd Year Student, 2nd Coll.  
Prize.
- ROGERS (R. S.), Greenwich.**  
1843. Midwifery, First Prize;  
Clinical Medicine, Hon. Cert.
- ROSSITER (G. F.), Taunton.**  
1871. 1st Year Student, 1st Coll. Prize.  
w 1872. 2nd Year Student, 2nd Coll. Prize.  
s 1872. 1st Coll. Prize.
- w 1873. 3rd Year Student, 3rd Coll. Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.

† Medical Superintendent Hanwell Asylum, and Lecturer on Psychology at St. Thomas's Hospital. Late Lecturer on Psychology at Middlesex Hospital.

‡ Resident Assistant Surgeon to St. Thomas's Hospital.

\* Late Surgical Registrar to St. Thomas's Hospital.

- ROUSE (R. E.), Woodbridge.**  
 s 1880. 2nd Year Student, 3rd College Prize.
- RUDALL (J. T.), Crediton, Devon.**  
 1853. Physiology, Hon. Cert.;  
 Midwifery, Hon. Cert.;  
 Medicine, Hon. Cert.;  
 Surgery, Hon. Cert.
- SANDFORD (H. C.), Brixton.**  
 w 1872. 1st Year Student, 1st Coll. Prize.  
 s 1872. 2nd College Prize.  
 w 1873. 2nd Year Student, 1st Coll. Prize.  
 s 1873. 3rd College Prize.  
 w 1874. 3rd Year Student, 2nd Coll. Prize;  
 Treasurer's Gold Medal.
- SANEYOSHI (Y.), Tokio, Japan.**  
 w 1881-2. 3rd Year Student, 1st Coll. Prize.
- SANKEY (G. G.), Ashford, Kent.**  
 1864. 3rd Year Student, 3rd Coll. Prize.
- SAUNDERS (G. M. C.), London.**  
 1843. Midwifery, Hon. Cert.
- SAUNDERS (H. W.), London.**  
 1867. 1st Year Student, 2nd Coll. Prize.  
 1868. Prosector's Prize.  
 1869. 3rd Year Student, 1st Coll. Prize;  
 Treasurer's Gold Medal;  
 Physical Society's 3rd Year's Prize.
- SAUNDERS (W. S.), Camden Town.**  
 1844. Midwifery, Hon. Cert.  
 1845. Medicine, Prize;  
 Midwifery, Prize;  
 Clinical Medicine, Prize.
- SAVILL (T. D.), Brixton.**  
 w 1875-6. 2nd Entrance Science Scholarship;  
 1st Year Student, The William  
 Tite Scholarship.  
 s 1876. 3rd College Prize.  
 w 1876-7. 2nd Year Student, Hon. Cert.  
 s 1877. 2nd Year Student, 2nd Coll. Prize.
- SCOTT (R. J.), Omagh, Tyrone.**  
 1861. 1st Year Student, Hon. Cert.
- SCUTT (T.), Bere Regis.**  
 w 1882-3. 3rd Year Student, 1st Coll. Prize.
- SEDGWICK (J.), Boroughbridge.**  
 1854. Descriptive Anatomy, Hon. Cert.  
 1855. Surgery, Hon. Cert.;  
 Midwifery, Hon. Cert.
- SEDGWICK (L. W.), Boroughbridge.**  
 1848. Descriptive and Surgical Anatomy,  
 Prize;  
 Physiology and Anatomy, Prize;  
 Medicine, Hon. Cert.;  
 Midwifery, Prize;  
 Surgery, Prize;  
 1849. Physiology, 1st Prize;  
 Midwifery, 1st Prize;  
 Surgery, Prize;  
 Medicine, 1st Prize;  
 General Proficiency, Treasurer's  
 Medal.
- SERGEANT (E.), Preston.**  
 1870. 3rd Year Student, 3rd Coll. Prize;  
 Cheselden Medal.
- SEWELL (E.), Little Oakley.**  
 1848. Physiology and Anatomy, Hon. Cert.
- SHARKEY (S. J.),\* Galway.**  
 1874. Physical Society's 2nd Year's Prize.
- SHAW (J.), Clapham Road.**  
 w 1874-5. 1st Year Student, 1st Coll. Prize.  
 s 1875. 1st Coll. Prize.  
 w 1875-6. 2nd Year Student, 1st Coll. Prize.

\* Assist.-Physician to, and Joint Lecturer on Pathological Anatomy and Demonstrator of Morbid Anatomy at, St. Thomas's Hospital;

- SHEA (H. G.), London.**  
 1860. 1st Year Student, Hon. Cert.  
 1861. 2nd Year Student, Hon. Cert.  
 1862. 3rd Year Student, 2nd Coll. Prize.
- SHEA (J.), London.**  
 1855. Midwifery, Hon. Cert.  
 1859. Midwifery, Hon. Cert.
- SHEPPARD (C. E.),† Kensington.**  
 w 1873-4. 1st Year Student, 1st Coll. Prize.  
 s 1874. 1st Year Student, 2nd Coll. Prize.  
 w 1874-5. 2nd Year Student, 1st Coll. Prize.  
 s 1875. 1st Coll. Prize.  
 w 1875-6. 3rd Year Student, 2nd Coll. Prize;  
 Physical Society's 2nd Year's Prize.  
 w 1876-7. 4th Year Student, the Treasurer's  
 Gold Medal.  
 w 1877-8. Solly Medal and Prize, £20.  
 Paper published in Hosp.  
 Reports, Vol. VIII.
- SHEPPARD (W. J.), Kensington.**  
 w. 1880-81. 3rd Year Student, 3rd Coll.  
 Prize.  
 w 1881-2. The Treasurer's Gold Medal.
- SHERRINGTON (C. S.),‡ Caius Coll.,  
 Cambs.**  
 w 1882-3. 6th Year, Grainger Testimonial  
 Prize.
- SHIRTLIFF (E. D.), Kingston-on-  
 Thames.**  
 w 1882-3. 2nd Entrance Science Scholarship.
- SIDDALL (J. B.),§ Morton, Derby.**  
 1862. 1st Year Student, Hon. Cert.  
 1863. 2nd Year Student, Hon. Cert.  
 1864. 3rd Year Student, Hon. Cert.;  
 Hon. Cert. for the Cheselden Medal.
- SIMMONS (H. B. M.), West Indies.**  
 1849. Descriptive Anatomy, Hon. Cert.
- SIMON (M. F.), Blackheath.**  
 1866. 1st Year Student, 1st Coll. Prize.  
 1869. 3rd Year Student, 3rd Coll. Prize;  
 Prosector's Prize;  
 Prize and Hon. Cert. for Surgery  
 and Surgical Anatomy.
- SIMS (G. S.), Derby.**  
 s 1881. 1st Year Student, 3rd Coll. Prize.
- SISSONS (W. H.), Hull.**  
 1858. Matriculation Examination—  
 Physics, &c., Prize.  
 1859. 2nd Year Student, Hon. Cert.;  
 Clinical Medicine, Prize;  
 Physical Society's Essay, Prize.  
 1860. 3rd Year Student, 2nd Coll. Prize.  
 Physical Society's Prize.
- SKINNER (W.), Stockton-on-Tees.**  
 1848. Botany, Hon. Cert.;  
 Materia Medica, Hon. Cert.
- SKIPPER (J.), Dalston, London.**  
 1852. Midwifery, Hon. Cert.
- SKIPTON (S. S.), East Indies.**  
 1851. Midwifery, Hon. Cert.
- SLATER (J. S.), Bath.**  
 1868. 1st Year Student, 1st Coll. Prize.  
 1869. Physical Society's 2nd Year's Prize.  
 1870. 3rd Year Student, 2nd Coll. Prize;  
 Treasurer's Gold Medal.
- SLAUGHTER (C. H.), Farningham.**  
 1855. Midwifery, Hon. Cert.

† Late Resident Assistant-Physician and Medical Registrar to St. Thomas's Hospital.

‡ Lecturer on Physiology at St. Thomas's Hospital.

§ Late Physician to H.B.M. Legation, Japan.

**SLAUGHTER (G. M.), Farningham.**

1854. Midwifery, Hon. Cert.

**SMITH (H. U.), Reading.**

w 1876-7. 4th Year Student, Cheselden Medal.

**SMITH (R. P.),\* Belvedere.**

s 1876. 2nd Year Student, 2nd College Prize.

**SMYTH (H. J.), Brondesbury.**

w 1882-3. 1st Year Student, 3rd Coll. Prize.

s 1883. 1st Year Student, 1st Coll. Prize.

w 1883-4. 2nd Year Student, 1st Coll. Prize.

s 1884. 2nd Year Student, 2nd Coll. Prize.

w 1885-6. 4th Year Student, Treasurer's Gold Medal.

**SNAITH (F.), Boston, Lincolnshire.**

1864. 3rd Year Student, Hon. Cert.

**SOLLY (E.),† Congleton.**

w 1883-4. 2nd Year Student, 2nd Coll. Prize.

w 1885-6. Solly Medal and Prize.

**SOLLY (R. V.), Congleton.**

w 1834-5. 2nd Year Student, ‡ 2nd College Prize.

w 1856-7. 4th Year Student, qualified for Cheselden Medal.

**SPRAKELING (R. J.), Canterbury.**

1855. Midwifery, Hon. Cert.

1856. 2nd Year Student, Hon. Cert. ;

Clinical Medicine, Prize.

**STAEB (A. F.), Ilfracombe.**

w 1885-6. 1st Year Student, 1st Entrance

Science Scholarship ;

The William Tite Scholarship.

s 1886. 1st Year Student, 2nd College Prize.

w 1886-7. 2nd Year Student, The Mus-

grove Scholarship

s 1887. 2nd Year Student, 1st Coll. Prize.

w 1887-8. 3rd. Year Student, 2nd Tenure of

Musgrove Scholarship, with 1st

Coll. Prize.

**STAEB (E. C.), Ilfracombe.**

w 1883-4. 2nd Year Student, Prosector's

Prize.

s 1884. 2nd Year Student, 1st Coll. Prize.

w 1885-6. 4th Year Student, qualified for

Cheselden Medal.

**STADDON (J. H.), London.**

1858. Clinical Medicine, Prize.

1859. Clinical Medicine, Prize.

**STEPHENS (J. N.), Walton-on-**

Thames.

w 1876-7. Physical Society's 1st Year's Prize.

**STEPHENS (S. Sanders), Taunton.**

1863. Physical Society's 2nd Year's Prize.

**STODDART (F. W.), Bristol.**

w 1877-8. 1st Year Student, 1st Coll. Prize.

**STOKES (W. G. G.), Cambridge.**

w 1887-8. 3rd Year Student, 3rd Coll. Prize.

**STONE (W.H.),‡ London.**

1854. Matriculation Examination—

Scholarship ;

1st Year Student, Scholarship ;

Descriptive Anatomy, Hon. Cert. ;

\* Assistant Medical Officer, Bethlem Royal Hospital for Lunatics. Late Resident Assistant-Physician to St. Thomas's Hospital.

† Surgical Registrar at St. Thomas's Hospital.

‡ Examiner in Medicine, Royal College of Physicians. Physician to, and Lecturer on Physics and Natural Philosophy, and on Materia Medica at St. Thomas's Hospital; Late Assistant-Physician to the Hospital for Consumption, Brompton.

1854. Botany, Prize ;

Chemistry, Prize.

1855. 2nd Year Student, Scholarship ;

Forensic Medicine, Prize ;

Physical Society's Essay, Prize ;

Practical Chemistry, Prize ;

Medicine, Prize ;

Descriptive Anatomy, Hon. Cert. ;

Materia Medica, Prize ;

Physiology, Prize ; [Prize.

Clinical Medicine, Mr. N. Smith's

1856. Clinical Medical Prize ; [Medal.

General Proficiency, Treasurer's

**SUMMERHAYES (H.), Crewkerne, Somersetshire.**

1861. Matriculation Examination—

Classics and Mathematics,

President's Prize ; [Prize ;

Modern Languages, &c., College

Physics and Natural History,

College Prize ;

The William Tite Scholarship.

1862. 2nd Year Tite's Scholarship.

1863. 3rd Year Tite's Scholarship ;

Treasurer's Gold Medal.

**SUMMERHAYES (W.), Crewkerne, Somersetshire.**

1856. Matriculation Examination—

Classics and Mathematics, Hon.

Cert. ;

Matriculation Examination—

Modern Languages, Prize.

**SUTCLIFF (E.), Camberwell.**

1861. 1st Year, 3rd College Prize ;

Matriculation Examination—Hon.

Cert.

1863. 3rd Year Student, 3rd Coll. Prize.

**SUTCLIFFE (J.), Ashton-under-Lyne.**

1869. Prosector's Prize.

**SWALLOW (J. D.), Reading.**

1861. 2nd Year Student, Hon. Cert.

**SWEETING (R. B.), Reading.**

1853. 1st Year Student, Scholarship ;

Descriptive Anatomy, Hon. Cert. ;

Chemistry, Hon. Cert.

1854. 2nd Year Student, Scholarship ;

Midwifery, Prize.

1855. 3rd Year Student, Scholarship ;

Midwifery, Hon. Cert. ; [Prize.

Clinical Medicine, Treasurer's

**SWEETING (T.), Reading.**

1855. Midwifery, Hon. Cert.

**TAKAKI (Kanehiro), Kasumigaseki,**

Tokio, Japan.

w 1875-6. 1st Year Student, 3rd Coll. Prize.

s 1876. 2nd College Prize.

w 1876-7. 2nd Yr. Student, 1st Coll. Prize.

s 1877. 2nd Year Student, 3rd Coll. Prize.

w 1877-8. 3rd Year Student, 2nd Coll. Prize.

w 1878-9. 4th Year Student ;

"The Cheselden Medal ;"

The Treasurer's Gold Medal.

**TALBOT (G. T.), Kidderminster.**

1848. Medical Reports, Dr. Roots' Prize.

**TAYLOR (C. M.), Wrawby, Brigg.**

1871. 1st Year Student, 2nd Coll. Prize.

w 1872. 2nd Year Student, 1st Coll. Prize.

w 1873. 3rd Year Student, 1st Coll. Prize ;

Surgery and Surgical Anatomy,

Hon. Cert.

**TAYLOR (S.),§ Burton-on-Trent.**

w 1872. 3rd Year Student, Hon. Cert.

§ Physician North London Hospital for Consumption; Demonstrator of Anatomy, St. Thomas's Hospital.

**TAYLOR (S. J.), Grantham.**

- s 1875. 1st Year Student, Hon. Cert.  
 w 1875-6. 2nd Year Student, The Musgrove  
 Scholarship.  
 w 1876-7. 3rd Year Student, 2nd Year  
 Musgrove Scholarship, and 1st  
 College Prize.  
 w 1877-8. The Mead Medal;  
 The Treasurer's Gold Medal.

**TEANBY (F. W.), Turnham Green.**

1851. Practical Midwifery, Prize.  
 1852. Clinical Medicine, Junior Prize;  
 Midwifery, Hon. Cert.

**THOMAS (L. M.), Camberwell.**

1866. 1st Year Student, 3rd Coll. Prize.  
 1867. 2nd Year Student, 3rd Coll. Prize.  
 1869. 3rd Year Student, 2nd Coll. Prize;  
 Cheselden Medal.

**THOMAS (P. C.), Chelsea.**

- w 1887-8. 4th Year Student, qualified for  
 the Mead Medal.

**THOMAS (W. L.), Neath, Glamorgan.**

1845. Chemistry, Prize;  
 Materia Medica, Prize.  
 1847. Medicine, Hon. Cert.;  
 Physiology and Anatomy, Prize.  
 Physical Society's Essay, Prize.

**THOMPSON (F. H.), Tenbury.**

1870. Prosector's Prize.

**THURICUM (G. D.), Kensington.**

- w 1878-9. Physical Society's 2nd Year's Prize.

**TIMOTHY (P. V.), London.**

1851. Practical Midwifery, Prize;  
 Midwifery, Hon. Cert.

**TODD (A. J. M.), Gravesend.**

- w 1863. 1st Year Student, 2nd Coll. Prize.  
 w 1864. Prosector's Prize.

**TOLLER (S. G.), Notting Hill.**

- w 1885-6. 1st Year Student, 2nd Entrance  
 Science Scholarship.  
 s 1886. 1st Year Student, 1st College Prize.  
 w 1886-7. 2nd Year Student,  $\frac{1}{2}$  1st and 2nd  
 College Prizes.  
 w 1887-8. 3rd Year Student, 2nd Coll. Prize.

**TOMSON (K.), Luton, Beds.**

1842. Materia Medica, Prize.  
 1843. Medicine, Prize;  
 Clinical Medicine, Hon. Cert.

**TOMSON (W. B.), Luton, Beds.**

- w 1879-80. 1st Year Student, 2nd Coll. Prize.  
 s 1880. 1st Year Student, 2nd Coll. Prize.  
 w 1880-81. 2nd Year Student, The Musgrove  
 Scholarship, Prosector's Prize.  
 w 1881-2. 3rd Year Student, 2nd Coll. Prize;  
 2nd Tenure of Musgrove  
 Scholarship.

- s 1882. 2nd Coll. Prize.  
 w 1882-3. Treasurer's Gold Medal.

**TONKING (J. H.), Camborne.**

- w 1884-5. 3rd Year Student,  $\frac{1}{2}$  2nd and 3rd  
 College Prizes.  
 w 1885-6. 4th Year Student, The Cheselden  
 Medal.

**TOTSUKA (K.), Tokio, Japan.**

- s 1882. 1st Year Student, 2nd Coll. Prize.  
 w 1882-3. 2nd Year Student,  $\frac{1}{2}$  Musgrove  
 Scholarship and 1st Coll. Prize  
 combined.

- w 1883-4. 3rd Year Student, 2nd tenure of  
 $\frac{1}{2}$  Musgrove Scholarship, with  
 3rd College Prize.

**TREND (H. G.), Bridgewater.**

1853. Practical Midwifery, Prize;  
 Midwifery, Hon. Cert.

1854. Midwifery, Hon. Cert.;  
 Clinical Medicine, Treasurer's Prize.

**TREVES (W. K.), Dorchester.**

1863. Matriculation Examination—  
 Physics and Natural History,  
 Hon. Cert.; and  
 Modern Languages and Modern His-  
 tory, College Prize and Hon. Cert.;  
 1st Year Student, Hon. Cert.  
 1865. 3rd Year Student, 2nd Coll. Prize;  
 Prosector's Prize.

**TURNERY (H. G.), Camberwell Grove.**

- w 1885-6. 2nd Year Student, 2nd Coll. Prize.  
 s 1886. 2nd Year Student, 2nd College Prize.  
 w 1886-7. 3rd Year Student, 3rd Coll. Prize.  
 s 1887. 3rd Year Student, 1st Coll. Prize.  
 w 1887-8. The Mead Medal.

**TYRRELL (W.), Richmond.**

1851. Descriptive Anatomy, Hon. Cert.  
 1852. Medicine, Hon. Cert.;  
 Surgery, Hon. Cert.  
 1853. Forensic Medicine, Hon. Cert.;  
 Ophthalmic Essay, Mr. Dixon's Prize.  
 1854. Surgical Reports, President's Prize.

**UMNEY (W. F.), Sydenham.**

- w 1887-8. 2nd Year Student, 1st Coll. Prize.

**VARDY (J. L.), London.**

1854. Midwifery, Hon. Cert.  
 1855. Practical Midwifery, Prize.

**VERDON (H. W.), Eccles.**

- 2nd Year Student, Hon. Cert.

**WAGSTAFFE (W. W.),\* Kennington.**

1862. Matriculation Examination—Classics  
 and Mathematics, President's  
 Prize.  
 Physics and Natural History,  
 College Prize; ; Prize;  
 Modern Languages, &c., College  
 1st Year Student, Treasurer's  
 Prize;  
 1863. 2nd Year Student, 1st. Coll. Prize.  
 1864. 3rd Year Student, 1st Coll. Prize;  
 Physical Society's 3rd Year's Prize;  
 Cheselden Medal;  
 Treasurer's Gold Medal.

**WALKER (R.), Kendal.**

1854. Descriptive Anatomy, Hon. Cert.;  
 Midwifery, Hon. Cert.  
 1855. Midwifery, Hon. Cert.

**WALLACE (C. S.), Haslemere.**

- w 1887-8. 1st Year Student,  $\frac{1}{2}$  2nd Coll. Prize.

**WALLER (A.), Islington.**

1864. 1st Year Student, 1st Coll. Prize.  
 1865. 2nd Year Student, 1st Coll. Prize.  
 1866. 3rd Year Student, 1st Coll. Prize;  
 Physical Society's 3rd Year's Prize;  
 Treasurer's Gold Medal.

**WALLER (C. B.), London.**

1860. 2nd Year Student, Hon. Cert.

**WARD (F. H.),† Scarborough.**

1863. 1st Year Student, Treas. Prize.  
 1864. 2nd Year Student, 1st Coll. Prize;  
 Physical Soc. 2nd Year's Prize.  
 1865. 3rd Year Student, 1st Coll. Prize;  
 Physical Soc. 3rd Year's Prize;  
 Cheselden Medal;  
 Treasurer's Gold Medal.

\* Late Assistant Surgeon to, and Joint Lec-  
 turer on Anatomy at, St. Thomas's Hospital.  
 Late Member of the Board of Examiners,  
 Royal College of Surgeons.

† Assistant Medical Officer, Wandsworth  
 Lunatic Asylum.

- WATSON (F.), Nottingham.**  
1859. 1st Year Student, Hon. Cert.;  
Matriculation Examination—  
Physics, &c., Prize.
- WAY (F. W.), Fratton, Portsmouth.**  
1853. Descriptive Anatomy, Hon. Cert.;  
Chemistry, Hon. Cert.;  
1854. Midwifery, Hon. Cert.;  
Surgery, Hon. Cert.
- WAY (J. P.), Portsmouth.**  
1861. 1st Year, Hon. Cert.
- WEBBER (W. W.), Crewkerne.**  
w 1876-7. 1st Year Student, 3rd Coll. Prize.
- WEBSTER (E.), Lee.**  
w 1833-4. 1st Year Student, 1st Coll. Prize.  
s 1835. 2nd Year Student, 2nd Coll. Prize.
- WEBSTER (H.), Dulwich.**  
1851. Matriculation Sch., Hon. Cert.;  
Descriptive Anatomy, Hon. Cert.  
1852. Botany, Hon. Cert.  
1853. Midwifery, Hon. Cert.
- WEEKES (F. H.), Southampton.**  
w 1873-4. 1st Year Student, 3rd Coll. Prize.  
s 1874. 3rd Coll. Prize.  
w 1874-5. 2nd Year Student, 2nd Coll. Prize.  
s 1875. 3rd Coll. Prize.  
w 1875-6. 3rd Year Student, 3rd Coll. Prize.
- WELLS (A. E.), Brixton.**  
w 1877-8. 1st Year Student, 2nd Entrance  
Science Scholarship.
- WEST (J. F.)\***  
1853. Midwifery, Hon. Cert.  
1854. Forensic Medicine, Hon. Cert.;  
Pathology, Hon. Cert.  
1855. Ophthalmic Reports, Prize.
- WHEATON (F. D. W.), Honiton.**  
1845. Practical Midwifery, Hon. Cert.
- WHEATON (S. W.), Battersea Park.**  
s 1855. 3rd Year Student, 2nd Coll. Prize.  
w 1855-6. 4th Year Student, The Mead  
Medal.
- WHITEHEAD (E. T.), Battersea.**  
w 1836-7. 1st Year Student, 2nd Coll. Prize.
- WHITEHEAD (J.), Preston.**  
1861. 1st Year, Hon. Cert.  
1862. 2nd Year Student, 3rd Coll. Prize.  
1863. 3rd Year Student, 2nd Coll. Prize.
- WILES (J.), Hitchin, Herts.**  
1850. Physiology, Hon. Cert.  
1851. (Accoucheur) Midwifery, Prize.
- WILLIAMS (H.), Longley, near  
Gloucester.**  
1868. 1st Year Student, 2nd Coll. Prize.  
1869. 2nd Year Student, 3rd Coll. Prize.
- WILLIAMS (J.), Westerleigh, Bristol.**  
1855. 1st Year Student, Scholarship;  
Midwifery, Prize;  
Botany, Prize;  
Chemistry, Hon. Cert.;  
Descriptive Anatomy, Prize;  
Materia Medica, Hon. Cert.  
1856. 2nd Year Student, Treas. 1st Prize.
1857. 3rd Year Student, Hon. Cert.  
Gen. Proficiency, Treasurer's Medal.
- WILLIAMS (J.), Doncaster.**  
1858. 1st Year Student, Hon. Cert.  
1859. 2nd Year Student, Hon. Cert.;  
Clinical Medicine, Prize.  
1860. 3rd Year Student, Hon. Cert.
- WILLIAMS (P. H.), Monmouth.**  
s 1872. 1st Year Student, Hon. Cert.
- WILLIAMS (P. M. G.), Newcastle  
Emlyn.**  
1864. Practical Midwifery, Prize.
- WILLIAMS (R. M.) Beaumaris.**  
1830. 1st Entrance Science Scholarship.
- WILLIAMS (W. R.),† Nottingham.**  
1856. Matriculation Examination in  
Classics, Mathematics, Hon. Cert.
- WILLIAMSON (R. J.), Ripon.**  
w 1876-7. 1st Entrance Sc. Scholarship.
- WINSTON (W. B.), Oxford Gardens.**  
w 1837-8. 1st Year Student, 2nd Entrance  
Science Scholarship.
- WITHERBY (W. H.), Croydon.**  
1853. Matriculation Examination in  
Modern Languages, Prize.
- WOAKES (E.), Luton, Beds.**  
1856. 1st Year Student, Hon. Cert.  
1857. 2nd Year Student, 2nd Prize;  
Clinical Medical Prize.  
1858. Essay on Neuralgia, Mr. N. Smith's  
Prize;  
Surgery and Surgical Anatomy,  
Cheselden Medal.
- WOOD (G. J.), London.**  
1863. Descriptive Anatomy, Hon. Cert.
- WOOD (R. H.), Loughborough,  
Leicester.**  
1854. Descriptive Anatomy, Hon. Cert.  
1855. Surgery, Hon. Cert.;  
Midwifery, Prize;  
Medicine, Hon. Cert.;  
Descriptive Anatomy, Prize;  
Physiology, Hon. Cert.  
1856. Physical Society's Essay, Prize.
- WOODHOUSE (T. J.), London.**  
1855. Chemistry, Hon. Cert.;  
Materia Medica, Hon. Cert.
- WOODMAN (W. E.), Camberwell.**  
s 1875. 1st Year Student, 2nd Coll. Prize.
- WOTTON (H. G.)**  
1855. Midwifery, Hon. Cert.  
1856. Midwifery, Hon. Cert.
- WRENCH (E. M.), Cornhill.**  
1-51. Descriptive Anatomy, Hon. Cert.;  
Physical Society's Essay, Treas-  
urer's 1st Year's Prize;  
1852. Physiology, Hon. Cert.
- WRIGHT (E. H.), Jersey.**  
s 1835. 2nd Year Student, 2nd Coll. Prize.
- WYMAN (W. S.), Kettering, North-  
hampton.**  
1852. Matriculation Examination  
Scholarship.

\* Late Surgeon to Queen's Hospital, and  
Professor of Clinical Surgery at Queen's  
College, Birmingham.

† One of H. M. Commissioners in Lunacy;  
late Resident Physician to Bethlehem Royal  
Hospital; late Lecturer on Mental Diseases  
at St. Thomas's Hospital.

All old Students of St. Thomas's Hospital are requested to send their present  
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Embankment, Westminster Bridge, S.E.*



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