leave a trace of their existence than those local affections of organs which appear at the time much more formidable. Thus I am now seeing a gentleman who had a bad attack of gout a short time ago, and a distinct mark is visible on his nails, corresponding to the time of the illness. In another gentleman there exists a mark on his nails at about one-eighth part distant from the root; he had an attack of acute rheumatism about six weeks ago. I have also lately seen another patient with these markings well formed after a severe attack of diphtheria.

Amongst the many interesting communications which have come to hand, I may mention one from Sir Thomas Watson, in which he informs me that he had several years ago an interesting conversation with Dr. Maclean, of the Colchester Hospital, on this subject; the latter gentleman having observed transverse depressions on men's nails in consequence, as he thought, of temporary starvation or arrest of nutrition of the tissues during a bygone acute disease, and these he called "hunger traces." Dr. Maclean had also noticed similar furrows on the hoofs of horses, and indentations or traces on the wings and tail feathers of domestic fowls and of wild birds living in captivity under similar conditions. Mr. Salter also informs me that some illnesses leave indelible traces on the teeth; and, if I have not misunderstood him, he has known a severe attack of whooping cough in childhood leave its traces on the teeth for ever. Dr. Mackaye, of Ardgay, informs me that he was much interested in the subject many years ago, not only in reference to the nails, but as to the changes which the hair undergoes; and he was led more especially to the investigation by the allusions made to the subject by Professor Alison in his lectures at the Edinburgh University. Dr. Washbourn, of Gloucester, also sent me a very interesting account of his own case, which was one of a most severe choleraic attack, accompanied by an alarming prostration and a sensation of icy coldness at the epigastrium; this was succeeded on his recovery by markings on all his nails, which he watched creeping on to the edge, when they finally disappeared.

There seems, then, to be sufficient facts to prove that during a severe illness a partial cessation of the nutritive processes takes place, as shown by the markings on the nails, by the falling off of the hair, or by the furrows on the teeth. Further observation may show in what affections these changes are more likely to occur, and thus may afford some indication of the amount of prostration which the system has undergone. It is remarkable that the first case in which I observed the nail-marks was one identical with that of Dr. Washbourn, one where a sudden and almost fatal prostration succeeded to a choleraic attack. The whole subject is suggestive of a wide field of physiological and pathological inquiry; at present it remains rather within the range of clinical study.

Grosvenor-street, W., Dec. 1869.

ON THE

EFFECTS OF THE ANTISEPTIC SYSTEM OF TREATMENT UPON THE SALUBRITY OF A SURGICAL HOSPITAL.

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THE antiseptic system of treatment has now been in operation sufficiently long to enable us to form a fair estimate of its influence upon the salubrity of an hospital.

Its effects upon the wards lately under my care in the Glasgow Royal Infirmary were in the highest degree beneficial, converting them from some of the most unhealthy in the kingdom into models of healthiness. The interests of the public demand that this striking change should be made generally known; and in order to do justice to the subject, it is necessary, in the first place, to allude shortly to the position and circumstances of the wards.

Each of the four surgeons of the infirmary had charge of three large wards, two male and one female, besides several small ones for special cases. Of these, the most important were the male accident ward and that for female patients, the former containing the chief operation cases as well as those of injury. The third main ward of each surgeon was devoted to chronic male cases, and was in the old infirmary building; but the other two were in the "New Surgical Hospital," erected nine years ago. This consists of four stories above a basement, each floor containing two large wards communicating with a central staircase, besides several smaller apartments. The wards are spacious and lofty, and in the centre of each are two open fireplaces, in a column which runs straight up to the roof, conveying the chimneys of all the floors, and also collateral ventilating shafts, which are warmed by the chimneys that accompany them, and, communicating with various apertures in the ceilings, form excellent means of carrying off the vitiated atmosphere, while fresh air is amply supplied by numerous windows at both sides, the beds being placed in the intervals between them, at a considerable distance from each other. Except the serious defect that the waterclosets in many cases open directly into the wards, the system of construction seemed all that could be desired.

But, to the great disappointment of all concerned, this noble structure proved extremely unhealthy. Pyæmia, erysipelas, and hospital gangrene soon showed themselves, affecting, on the average, most severely those parts of the building nearest to the ground,* including my male accident ward, which was one of those on the ground-floor; while my female ward was on the floor immediately above. For several years I had the opportunity of making an observation of considerable, though melancholy, interest—viz., that in my accident ward, when all or nearly all the beds contained patients with open sores, the diseases which result from hospital atmosphere were sure to be present in an aggravated form; whereas, when a large proportion of the cases had no external wound, the evils in question were greatly mitigated or entirely absent. This appeared striking evidence that the emanations from foul discharges, as distinguished from the mere congregation of several human beings in the same apartment, constitute the great source of mischief in a surgical hospital. Hence I came to regard simple fractures, though almost destitute of professional interest to myself and of little value for clinical instruction, as the greatest blessings; because, having no external wound, they diminished the proportion of contaminating cases. At this period I was engaged in a perpetual contest with the managing body, who, anxious to provide hospital accommodation for the increasing population of Glasgow, for which the infirmary was by no means adequate, were disposed to introduce additional beds beyond those contemplated in the original construction. It is, I believe, fairly attributable to the firmness of my resistance in this matter that, though my patients suffered from the evils alluded to in a way that was sickening and often heartrending, so as to make me sometimes feel it a questionable privilege to be connected with the institution, yet none of my wards ever assumed the frightful condition which sometimes showed itself in other parts of the building, making it necessary to shut them up entirely for a time. A crisis of this kind occurred rather more than two years ago in the other male accident ward on the ground-floor, separated from mine merely by a passage 12 ft. broad; where the mortality became so excessive as to lead, not only to closing the ward, but to an investigation into the cause of the evil, which was presumed to be some foul drain. An excavation made with this view disclosed a state of things which seemed to explain sufficiently the unhealthiness that had so long remained a mystery. A few inches below the surface of the ground, on a level with the floors of the two lowest male accident wards, with only the basement area, 4 ft. wide, intervening, was found the uppermost tier of a multitude of coffins, which had been placed there at the time of the cholera epidemic of 1849, the corpses having undergone so little change in the interval that the clothes they had on at the time of their hurried burial were plainly distinguishable. The wonder now was, not that these wards upon the ground-floor had been unhealthy, but that they had not been absolutely pestilential. Yet at the very time when this shocking disclosure was being made, I was able to state, in an address which I delivered to the meeting of the British Medical

* Statistics collected by desire of the managers established the fact that the ground-floor wards were, on the average, most liable to pyæmia, whoever might be the surgeon in charge; and that those on the floor immediately above came next in this respect.

Association in Dublin, that during the previous nine months, in which the antiseptic system had been fairly in operation in my wards, not a single case of pyæmia, erysipelas, or hospital gangrene had occurred in them; and this, be it remembered, not only in the presence of conditions likely to be pernicious, but at a time when the unhealthiness of other parts of the same building was attracting the serious and anxious attention of the managers. Supposing it justifiable to institute an experiment on such a subject, it would be hardly possible to devise one more conclusive.

Having discovered this monstrous evil, the managers at once did all in their power to correct it. The extent of the corrupting mass was so great that it seemed out of the question to attempt its removal; but it was freely treated with carbolic acid and with quick lime, and an additional thickness of earth was laid over it; and, further, a high wall at right angles with the end of the building, and reaching up to the level of the first floor, so as necessarily to confine the bad air most prejudicially, was pulled down, and an open iron railing was substituted for it.

There can be no doubt that these measures must have proved salutary. But even if it were admitted that they cured completely the particular evil against which they were directed, it would still have to be confessed that the situation of the surgical hospital has been far from satisfactory. Besides having along one of its sides the place of sepulture above alluded to, one end of the building is conterminous with the old Cathedral churchyard, which is of large size and much used, and in which the system of "pit burial" of paupers has hitherto prevailed. I saw one of the pits some time since, having been requested to report upon it by one of the civic authorities, who is also a manager of the infirmary, and who, having accidentally discovered what was going on, at once took steps to prevent for the future the occurrence of anything so disgraceful. The pit, which was standing open for the reception of the next corpse, emitted a horrid stench on the removal of some loose boards from its mouth. Its walls were formed, on three sides, of coffins piled one upon another in four tiers, with the lateral interstices between them filled with human bones, the coffins reaching up to within a few inches of the surface of the ground. This was in a place immediately adjoining the patients' airing ground, and a few yards only from the windows of the surgical wards. And the pit which I inspected seems to have been only one of many similar receptacles, for THE LANCET of Sept. 25th contains a statement, copied from one of the Glasgow newspapers, that "the Dean of Guild is said to have computed that five thousand bodies were lying in pits, holding eighty each, in a state of decomposition, around the infirmary."* Just beyond the churchyard rises an eminence covered by an extensive necropolis, which, however, from its greater distance, must have comparatively little deleterious influence. When I add that what is called the fever hospital,† also a long four-storied building, extends at right angles to the new surgical hospital, separated from it by only eight feet, and that the entire infirmary, containing 584 beds, stands upon an area of two acres, and that the institution is almost always full to overflowing,‡ I have said enough to show that the wards at my disposal have been sufficiently trying for any system of surgical treatment. Yet, during the two years and a quarter that elapsed between the Dublin meeting and the time of my leaving Glasgow for Edinburgh, those wards continued in the main as healthy as they had been during the previous nine months. Adding these two periods together, we have three years of immunity from the ordinary evils of surgical hospitals, under circumstances which, but for the antiseptic system, were especially calculated to produce them.§

* I doubt if even my sense of the importance of the subject I am dealing with would have induced me to enter into these disagreeable details, were I not able at the same time to bear my testimony to the zealous manner in which the managers of the Infirmary and the Town Council are exerting themselves to correct the evils referred to. I understand that it is in contemplation to abolish entirely intra-mural interment in Glasgow.

† About half the wards of the fever hospital are used for surgical cases.

‡ The rapid increase of Glasgow has rendered the Infirmary, in spite of considerable additions of late years, quite inadequate to the wants of the population; but this evil will shortly be remedied by the construction of a general hospital in connexion with the new College.

§ The antiseptic system was commenced nearly five years ago, but was for the first two years employed almost exclusively in compound fractures and abscesses, which form but a small proportion of surgical cases, so that the system cannot be said to have been in operation for more than three years with reference to the subject of the present paper.

It may be well to mention in detail some facts regarding the comparative frequency, before and after the period referred to, of the three diseases to which surgical wards have hitherto been peculiarly liable—namely, pyæmia, erysipelas, and hospital gangrene.

And first of pyæmia. This fearful disease used to occur principally in two classes of cases—namely, compound fractures and the major amputations. In compound fracture, it was so rife just before the introduction of the antiseptic system that I had one of the sulphites administered internally as a prophylactic, in accordance with Polli's views, to every patient admitted with this kind of injury; though I cannot say that we observed any distinct evidence of advantage from the practice. But since I began to treat compound fractures on the antiseptic system, while no internal treatment has been used, I have not had pyæmia in a single instance, although I have had in all thirty-two cases—six in the forearm, five in the arm, eighteen in the leg, and three in the thigh. These cases do not include those in which the injury was so great as to demand immediate amputation. But it must be remarked that many of the limbs saved were so severely injured that I should formerly have removed them without hesitation. I almost forget the kind of considerations which used to determine me to amputate under the old treatment; though I know that experience taught us that it was only in comparatively mild cases that it was justifiable to attempt to save the limb. Now, however, there is scarcely any amount or kind of injury of bones, joints, or soft parts which I regard as inconsistent with conservative treatment, except such destruction of tissue as makes gangrene of the limb inevitable as an immediate consequence.

But I may take this opportunity of observing that the attempt to save a limb which, under ordinary treatment, would be subjected to immediate amputation, ought not to be made lightly, or without a thorough acquaintance with some trustworthy method of carrying out the antiseptic system; by which I mean, not the mere use of an antiseptic, however potent, *but such management of the case as shall effectually prevent the occurrence of putrefaction in the part concerned.* Without this such endeavours are far worse than useless; for by the time that local disturbance and constitutional disorder have made it apparent that the antiseptic means have failed, the patient is so much prostrated by irritation and blood-poisoning, that the operation, if performed, is probably too late; and thus a loose and trifling style of "giving the treatment a trial" swells the death-rate at once of compound fracture and of amputation.

On the other hand, the surgeon will not on this account be justified in contentedly pursuing the old practice of primary amputation; for the antiseptic means which it has been the main labour of the last five years of my life to improve are now so satisfactory* that anyone duly impressed with the importance of the subject, and devoting to it the study and practical attention which it demands, will, with little trouble to himself, securely attain the results which he desires.

I lately visited my wards in Glasgow after an absence of some weeks, and saw, amongst other cases, a compound dislocation of the ankle in a man who had fallen about four feet from the platform at a railway station, and lighted on the outer side of the right foot, which had been forced violently inwards, producing a contused and lacerated wound, about four inches long, crossing the external malleolus, and communicating with the articulation. When I saw the patient the wound had been converted into a superficial sore, cicatrising rapidly; and there had been from first to last no deep-seated suppuration, nor any local or constitutional disturbance. I asked my then house-surgeon, Mr. James Coats, with whom the most critical part of the treatment had rested, whether he could reckon pretty securely upon such results. He replied, "With certainty." I asked the question for the sake of others who were standing by, having little doubt what the answer would be, for when I left him in charge I felt sure that the antiseptic management of the cases would be as satisfactorily conducted as if I were present.

At the same time, it is only right to add, that when

* I hope to bring before the profession the improved antiseptic means above alluded to by publishing from time to time in THE LANCET cases illustrative of their employment.

he entered upon his office, though convinced of the truth of the theory of the antiseptic treatment, he by no means felt the confidence in carrying it out which he has since acquired; and if an able man like Mr. Coats, imbued with the principles which I have striven to establish, required some practical initiation into the subject before he could be regarded as trustworthy, still more must such be the case with those who, educated in the old system, and long habituated to its practice, have to unlearn cherished ideas and instinctive habits.

(To be concluded.)

FURTHER NOTES ON PULSATING TUMOURS OF THE NECK.*

BY JOHN COCKLE, A.M., M.D.,

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I SUBMIT the details of two additional cases of Dilatation of the Innominate Artery, which, added to those already published by me, may enable some general conclusions to be drawn respecting this affection.

The first case occurred in a patient of Mr. Parrott, of Enfield, and which I saw with him on two occasions during the month of April last. Mr. Parrott informed me that his attention was first directed to the tumour in December, 1868, when called to the case in consequence of several severe attacks of epistaxis, in one of which he was compelled to plug the nostril before the hæmorrhage could be arrested. He considered this circumstance noteworthy, as showing, perhaps, a tendency to disease of the vessels. The artery at that time was pulsating very strongly, from the sternal notch to the origin of the carotid. It was not quite clear to his mind, at this period, whether the aorta was implicated, but he considered that it was. There were no accurate means of knowing how long the tumour had existed, but, in his opinion, it probably originated about that time.

I took the following notes when I saw the case. The patient was a middle-aged widow, somewhat corpulent, and of sallow complexion. A tumour, which had been observed about four months, very large and prominent (but appearing larger than it really was from a large collection of adipose matter in front of it), completely filled the episternal hollow, passing up somewhat in front of the trachea, and from thence obliquely across the right side of the neck. The impulse was very expansive and forcible, but unattended by thrill; the collapse did not feel quite complete, but this might be explained, possibly, from the collection of adipose matter mentioned. The right carotid and right radial pulses (I speak doubtfully) seemed a trifle weaker than those of the opposite side. A double murmur was audible over the tumour, and also down the aorta, to its origin. The heart's impulse was by no means great, nor was its apex lowered. The condition of the pupils could not be noted, as the patient had lost the sight of the right eye for some years.

In a recent communication from Mr. Parrott (Nov. 25th) he states:—"The patient has lately had three attacks of hæmorrhage, always occurring in the night or early in the morning; on awaking, she has blood in her mouth. I do not think the tumour has increased in size since you saw it; she has occasionally some pain in it, but this is always relieved by the application of cold."

I ought, by the way, to mention that this patient was seen in the early stage of the affection by a London surgeon of repute, who suggested the application of instrumental pressure; but the patient either could not or would not persevere in its use.

For the next case I am indebted to the kindness of my colleague, Dr. Rickards. It is a case the more interesting as, in addition to innominate dilatation, there is cirsoid aneurism of the left carotid.

Mrs. G——, admitted under my care at the Royal Free Hospital in July, 1869, is a widow fifty years of age. Her complexion is slightly pallid, but otherwise natural. There is some amount of spinal curvature. She has always been of delicate constitution, and had formerly to work hard. The cause of her father's death she does not know. Her mother died of diseased liver. Her two brothers died of disease of the heart, at the respective ages of fifty and fifty-two. About seven years ago she first felt a beating in the hollow of the throat, and suffered from rheumatism (as she expresses it) of the head and neck. She still suffers much, at times, from this pain, which affects both sides; also from cough in the morning, shortness of breath occasionally, especially on ascending stairs, and from palpitation of the heart on any excitement. On inspection, the left jugular vein is seen distended, but without pulsation. The superficial veins coursing over the left side of the chest are more prominent than those on the corresponding side. The pupils are equal and of natural size. The right radial pulse was stronger than the left when first examined. The swelling of the left carotid artery (the coats of which feel much thickened) involves the upper half of the vessel. Its prominence is very marked about two inches below the ramus of the jaw, as is also the locomotion of the artery, which here advances at each diastole with a rapid and very forcible forward projection alongside the tracheal edge of the left sterno-mastoid muscle, and then as rapidly retreats during the succeeding systole. The tracing of its impulse has been taken by Dr. Hawksley with his stetho-sphygmograph, as also those of both radial pulses. The latter agree in every particular with those taken at the hospital. A pulsating swelling, about the shape and size of a date, is visible, emerging from behind the right sterno-clavicular articulation, and occupying the hollow of the neck. It extends upwards from beneath the inner head of the sterno-mastoid muscle to its outer head, taking a somewhat oblique direction. The impulse is strong, expansive, and liquid during arterial diastole; during systole the swelling perfectly subsides. The heart appears to be displaced horizontally; its apex is situate near the fourth rib, one inch above the left nipple; and there is dilated hypertrophy of the left ventricle. The cardiac impulse is synchronous with that of the tumour and of the radial pulses. No thrill anywhere exists. The right radial pulse, formerly strongest, has appeared of late occasionally to be slightly weaker than the left, but both are perfectly regular, soft, of normal frequency, and without any collapse. The sphygmograph tracing, however, tells plainly of increased arterial resistance. At or just below the right sterno-clavicular junction a double murmur exists, having here a maximum. The first arterial diastolic murmur is soft and somewhat blowing; the second arterial systolic murmur is a little shorter in duration, and of hoarser character. These murmurs, scarcely changed, are audible in the swelling and right carotid artery, but weaker down the aorta. Immediately under the uppermost part of the sternum a musical murmur of intensity is heard at times, and loudest during arterial diastole: it was of remarkable intensity when Dr. Sibson examined this case with me the other day, and we both consider it of venous origin. About one inch above the left nipple, and corresponding to the site of greatest cardiac impulse, exists a second maximum focus of double murmur. The systolic murmur here is most intense, being at intervals of nearly musical *timbre*, and traceable vertically upwards to the right clavicle, and obliquely downwards nearly to the ensiform cartilage. The second murmur is not so loud, neither is it so widely heard. They diminish somewhat as they are traced midway up the aorta, so that, apparently, a minimum point exists between the two maxima foci. At the left axillary line the murmurs lose all their intensity, and are nearly replaced by normal tic tac, except that the first sound remains faintly murmurish. No murmur is audible at the lower angle of the left scapula. On the left side of the neck a closure sound of the sigmoid valves apparently is heard.

Now, are these murmurs of aortic origin? Such murmurs are occasionally well marked at and near the apex of the heart, and, in exceptional cases, the return murmur may weaken upwards in the aorta; the pulse is perfectly regular, and the absence of collapse might be explained by some coexisting contraction. But we should be perplexed in accounting for the absence of a more defined murmur with the upward current. The sphygmographic tracing wants its characteristic crotchet. But our greatest diffi-

* Read before the Medical Society of London, Nov. 30th, 1869.