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SOME CARDIAC PHENOMENA OBSERVED IN
TYPHOID FEVER.*

By ROBERT E. McKECHNIE, M.D.,
House Physician, Montreal General Hospital.

Mr. President and Gentlemen:—Through the kindness of Dr. MacDonnell, I am permitted to bring before your notice the two following cases, which were admitted into his wards in the Montreal General Hospital, and so came under my immediate observation as his House Physician. They are two cases of typhoid fever, which would be classed as mild and uninteresting, were it not for certain cardiac phenomena which they presented.

Their histories are as follows:—

CASE I.—Mary M., aged 23, a servant, came into hospital on the 7th day of her illness. With the exception of an attack of smallpox at 2 years of age, she had always enjoyed good health.

On admission, her temperature was 102°; pulse, 100; and respirations, 28. Examination of lungs and heart yielded negative results. The abdomen was tumid with marked tenderness, with gurgling in the right iliac fossa. No typhoid spots were seen and the spleen was not enlarged.

On the 11th day of the fever, typhoid spots appeared. There was no tympanites, and bowels moved only by enemata.

Up to the 18th day the case progressed favorably; the temperature for the previous week rarely going above 102°; the bowels still moving only by enemata; and there being no tympanites or excessive abdominal pain.

* Read before the Medico-Chirurgical Society of Montreal.

On this 18th day, at 6 a.m., the nurse took the temperature as usual, and found it 100°. Half an hour later, noting a great change in the patient, the temperature was again taken and found to be but 98°. The patient was then extremely pale, as though blanched by a hæmorrhage; the pulse about 150 and very weak; the face and extremities cold, and bathed by a profuse cold perspiration. Hæmorrhage being at once thought of, the usual remedies were applied.

By noon the extremities were warmer, and the pulse, although still weak and fast, somewhat stronger.

From this time on to the 28th day (ten days), the patient steadily grew stronger; a slight degree of color returned to the cheeks; appetite was returning, and the temperature had been normal for five days.

The bowels still moved only by enemata, and a close watch was kept on the stools for signs of hæmorrhage; but none appeared, although three large motions had been passed in the interval.

But on this 28th day a fresh syncopal attack occurred. At 7.30 p.m., just after having been made comfortable in bed for the night, which process necessitated a certain amount of disturbance to the patient, she again became suddenly faint, very pale, broke out into a profuse perspiration, and pulse became rapid and feeble. In fact, the pulse was so feeble that the stethoscope was applied over the heart to get the rate. There was then heard over the left ventricle, at the apex, and propagated into the axilla, a loud blowing systolic murmur. Examination failed to find any cardiac enlargement.

Hot applications were applied and stimulants ordered.

Two days afterwards she was much stronger. The murmur, as above noted, still persisted, and in addition a loud systolic murmur was heard at the aortic cartilage, propagated upwards along the vessels of the neck, and also heard across the upper part of the chest, from the aortic cartilage to the left axilla. A slight trace of blood was seen in a stool passed this day, which was the only blood passed throughout the case.

Ten days afterwards the patient had so advanced in convalescence that she was out of bed every afternoon. At this time the murmur could not be heard at the apex at all.

A week later, two days before her discharge, the note in the

case book reads: "The murmur is heard with difficulty at the aortic cartilage, and not at all in the axilla or at the apex."

The second case is entirely different to the preceding, but still presents a similar problem to be solved.

CASE II.—Annie M., aged 21; a general servant, lately out from Ireland, was admitted to hospital on the 6th day of the fever.

When a child she had had measles, scarlet fever, chicken pox, and whooping cough; since when she had always had good health. But the past four months she had found herself breathless on exertion; dizzy at times; and troubled with palpitation.

On admission, she was found to be in a good state of nutrition. Her face, the mucous membranes of the mouth, and the surface of the body generally, were very pale. There was visible pulsation of the carotids; and under the finger nails, and through the mucous membrane of the lips, could be seen a capillary pulse. The abdomen was tumid, with no complaint of pain on palpation; the bowels constipated; the tongue of the ordinary typhoid type. No spots were visible. The superficial area of cardiac dulness was enlarged, measuring $3\frac{1}{2}$ inches transversely, with the apex beating $\frac{1}{2}$ inch inside and under the nipple. Over the upper part of the sternum could be heard a systolic blowing murmur, propagated up the neck, and across the upper part of the chest to the left axilla; but not heard at the apex.

The pulse was semi-collapsing, 102 to the minute, regular in volume and rhythm; temperature, 103° ; respirations, 24. Examination of lungs found them normal. The liver measured 3 inches vertically in the right mammillary line. The spleen was not enlarged.

Three days later, characteristic typhoid spots began to appear; and the next day the spleen was noted as enlarged. But, on the third day after admission (the 9th of the fever), a faint systolic murmur was heard at the heart's apex. It increased in strength for a day or so, becoming quite marked, and co-existing with the original murmur. This persisted for some days. The first sound of the heart was also almost inaudible. The case ran a favorable course and normal temperature was reached on the 20th day.

On the 26th day, the patient convalescing rapidly, I find this note: "Area of cardiac dulness remains as on admission; the apex also where then found. But the systolic murmur then described as being heard over the upper part of the sternum, across into the axilla, up the neck, and the additional one, discovered three days later, at the apex; now at times cannot be heard at all, sometimes can be heard faintly at the aortic cartilage, sometimes at the apex."

Three weeks later, the patient was still in the hospital, having been detained by an abnormal temperature, which appeared after she had been given solid food. At this date, no trace of a murmur could be heard in any of the areas where it had been formerly heard.

While these two cases are different in many important points, they possess this feature in common, that, there was a progressive development of some cardiac affection in each. This was shewn, in the first case, by the presence of a murmur where none existed before and an addition in a few days of another marked murmur. In the second case, a murmur was present when the patient first came under observation, but an additional one was developed during the course of the disease. And in each, as the fever ran its course, these cardiac manifestations became less marked, entirely ceasing in one.

If the two cases cited were not typhoid, the inferences and conclusions to be drawn from them would be erroneous; hence, it will be necessary to briefly exclude those diseases which might be mistaken for it, especially those with cardiac complications.

Murchison says that "the various manifestations of tuberculosis constitute the maladies most difficult to distinguish from enteric fever." Fagge qualifies this by saying that "miliary tuberculosis of the lungs may be mistaken for typhoid with bronchitis." As there was no pulmonary involvement this can be at once excluded. Spots, closely resembling those found in typhoid, are described as being found in acute tuberculosis; but Murchison met with only one such case. It was diagnosed typhoid and died, the autopsy revealing the error. The strongest proof that our cases were not tuberculosis is, that both recovered. The same fact will exclude ulcerative endocarditis, and pernicious anæmia with febrile symptoms.

On the other hand, we have the strongest proofs that our cases were typhoid, in a sequence of typical symptoms, completed by the finding of the characteristic typhoid spots.

Murchison says: "When after febrile symptoms of about a week's duration, lenticular rose spots appear in successive crops, the diagnosis of enteric fever is certain, whatever be the other symptoms. Two or three characteristic spots will be sufficient."

Acknowledging the cases to be typhoid fever, the question arises, what, then, was the nature of the cardiac phenomena? We have in the production of cardiac murmurs to take account of the factors engaged; namely, of the blood, of the endocardium, of the myocardium, and of the pericardium. There were no symptoms at all suggestive of a pericarditis, nor would such a disease account for the signs found; so we may dismiss a lesion of the pericardium at once.

A hæmic origin of the murmurs is not so easily set aside. In our 2nd case we have a girl of 21, probably a hard-worked servant, very anæmic, and with a history of having suffered from breathlessness, dizziness and palpitation for four months previously. No recent cause had occurred to bring on these symptoms, unless it were an anæmic state. But, there is strong evidence that there was long-standing valvular disease in her case. She had had scarlet fever as well as measles when a child, and it is quite possible that an endocarditis had complicated one of these diseases, leaving permanent damage. Compensation had been good from that time till perhaps four months ago, when she first noticed shortness of breath and palpitation. At this date, also, she left home and went to service, hence hard work may have lessened the perfection of compensation. Or mere anæmia may have given these symptoms irrespective of cardiac disease. At any rate, when the patient came under our observation, she had every evidence of long-standing disease of the aortic valves, in an enlarged heart, with pallor of the surface of the body, pulsation of the vessels in the neck, a capillary pulse, a systolic murmur heard at the aortic cartilage, and propagated up the great vessels of the neck.

If it were not that fresh cardiac symptoms were added to the foregoing, this case would not present the interest it does.

Why an anæmic state of the blood, superadded to the changes which take place in the blood in all fevers, would not especially predispose to the development of cardiac murmurs, without any actual cardiac disease, may well be asked.

According to Bristowe, in his article on Anæmia, "the development of abnormal sounds in the heart and blood vessels, independent of organic lesions, is of common occurrence and highly characteristic, a soft systolic murmur is to be heard frequently over the situation of the aortic and pulmonary valve, and along the course of the ascending arch and innominate artery, occasionally at the apex;" while Fagge, in describing different forms of anæmic murmurs, says: "An anæmic murmur of another kind is systolic in rhythm, and is heard over the heart and main arteries. It is usually loudest at the base, and it often seems to be traceable along the pulmonary artery, rather than along the aorta. . . . Whether an anæmic murmur is ever localized at the apex, I am not sure. . . . The basic systolic murmur often has a rough, harsh quality, suggestive of anything rather than a functional origin."

Fagge, therefore, doubts an anæmic murmur ever being localized at the apex. But in both our cases this occurred. In this 2nd case which we have been discussing, the murmur was developed under observation, and the characters of it suggested regurgitation, rather than that it had a hæmic origin. In the 1st case, the onset of the cardiac manifestations was too sudden to be from a hæmic cause. In both cases, the distribution of the murmurs, together with their intensity of sound, pointed to an incompetency of the valves from some cause. "For an anæmic murmur is usually loudest at the base, and it often seems to be traceable along the pulmonary artery rather than along the aorta." So, while anæmia itself cannot be excluded from the cases, it of itself is not sufficient to account for the collapse in the one case, or the physical signs in either.

That an endocarditis may have been the cause also needs investigation. It is a complication which may be looked for in any of the specific fevers, and slight degrees of it are found in typhoid oftener than commonly supposed. Jeuner noted it in three cases out of sixteen, while, according to Hoffman, the endocardium is often opaque and thickened, owing to a fatty degeneration of its lining epithelium; and in several instances

he found recent endocarditis, with vegetations on the aortic and mitral valves.

Bristowe says a subject of endocarditis remains liable to fresh attacks of the inflammation, and there is every probability to suppose that Case 2 was a former subject of endocarditis. I think there is some proof, that not only were the aortic valves then affected, but also the mitral, for a contracted liver of three inches vertical dulness was noted, which would be accounted for by chronic mitral incompetency. If this be the correct view, then compensation had later on improved, so as to be about perfect, but was again lost during the course of the fever to an appreciable extent, and regained as convalescence advanced. The cause of this slight loss of compensation and recovery will be discussed later on, and is not an endocarditis.

But endocarditis cannot be thus easily dismissed, for certain points are strongly in its favor. Thus Bristowe says: "If in the progress of any one of those diseases of which endocarditis is a common complication, we detect a cardiac murmur which had not previously existed; or if further observation proves this to be a permanent phenomenon; or if changes in it indicative of increasing mischief take place; or if additional murmurs become developed, we cannot reasonably doubt that endocarditis is present." And as further support he says: "We must not forget that direct murmurs due to granulations occasionally disappear."

Now, in regard to these statements, we must note that Bristowe speaks of those diseases in which endocarditis is a common complication, which statement lessens the value of the observation when we try to apply it to typhoid; for endocarditis is not a common complication of it. Bristowe, in making this statement, was carefully weighing evidences and probabilities, which were of value only in the class of cases he was thinking of, so that having taken typhoid out of that class, the probabilities of endocarditis being present are reduced, unless new evidence is forthcoming.

The fact that our murmurs lessened and disappeared is, of course, not at all contrary to the view that endocarditis was their cause; but the fact that they lessened and disappeared coincidentally with the return of strength, as convalescence advanced, strongly suggests another cause, which either will

account for the phenomena under discussion, or will act as a factor, in conjunction with the causes already discussed, to account for them. This is disease of the myocardium.

Degeneration of the muscle cells of the heart walls is common to many different fevers. According to Murchison, "Louis found marked softening, sometimes associated with thinning of the walls, in 15 out of 47 cases of typhoid. Jenner found the heart soft and flabby in 6 out of 11 cases; . . . and Hoffman has found either waxy or granular degeneration of the muscular tissue of the heart in 103 out of 159 cases."

Hutchinson, in Pepper's System, observes that "the heart, in common with the other muscles of the body, suffers from both forms of degeneration, but the granular form appears to be more common than the waxy. In protracted cases it is usually much softened. . . . Upon minute examination, the degeneration is found to have taken place in patches, the diseased fibres being found alongside of others which have scarcely undergone any alteration. These patches are especially common in the papillary muscles of the mitral valve, a fact which explains the occasional presence of systolic murmurs in typhoid fever."

In another place he also says: "Degeneration of the muscular tissue of the heart is probably present in some degree in every case of typhoid fever, being, of course, most marked in the severest cases."

From the foregoing, it is evident that a weakening of the cardiac wall must be looked for in every case of typhoid, and is a factor too important to be overlooked in hunting for an explanation of the signs found in our cases. That we have evidence that this parenchymatous degeneration may occur early in the disease, is seen in the tremors of the tongue, an early observable fact. These tremors, according to Fagge, are due to this cause.

Now, anæmia itself is a common cause of parenchymatous degeneration of the muscle wall of the heart, and may lead to so much weakening, with dilatation, as to give cardiac murmurs which are not hæmic. Both our cases were anæmic on admission, hard-worked servants. So we have a two-fold reason for supposing the heart-walls weakened, fever and anæmia.

According to Osler, "impaired nutrition of the heart-walls, from degeneration or inflammation, may lead to such a diminution of the resisting power that dilatation readily occurs. In fevers, the loss of tone due to parenchymatous degeneration or myocarditis, may lead to a condition of acute dilatation which may prove fatal. It is a well recognized cause of death in scarlatinal dropsy, and may occur in rheumatic fever, typhus, typhoid, erysipelas, etc. . . . In anæmia, leukæmia and chlorosis, the dilatation of the chambers may be considerable. . . . Under any of these circumstances, the walls may yield with normal blood pressure, or if increased tension is present, the effect is the more readily produced."

Again, he says: "Dilatation with thinning is often the result of an acute process met with in the fevers. . . . The auriculo-ventricular rings are often dilated, and there may be an inch and a half, or even two inches, of increase in circumference. . . . Great dilatation is always accompanied with relative incompetence of the valves, so that free regurgitation into the auricles is permitted."

And again: "In anæmia and fevers the temporary dilatation may undoubtedly pass away with the improvement of health."

In connection with weakening of the cardiac walls, an important sign is a feeble or imperceptible first sound. This is found in all forms of weak heart, the fatty, as well as that the subject of febrile degeneration. In our 2nd case this sign was marked; but I find no note in the case book on this point in reference to Case 1.

The presence of an apex murmur, also, may be a proof that there were weakened cardiac walls with some dilatation. To quote from Loomis' article in Pepper's System: "Mitral regurgitation may occur independent of valvular disease, from displacement of one or more of the segments of the valve, the result of changes in the papillary muscles, chordæ tendinæ or the ventricular walls. It may also occur in extreme anæmia, or from relaxations of the papillary muscles, etc." In another place he says: "It may occur in conditions of extreme anæmia, or where there is degeneration of the walls of the left ventricle."

Returning to our two cases, there is no need to try to adapt our explanation to fit these two, merely because one ward con-

tained them at the same time. I do not think a single explanation would satisfy the symptoms noted. So, with the foregoing extracts, culled from various sources, we are in a position to attempt to clear up the subject. In Case 2, my opinion is, that a previously anæmic condition coupled with the degenerating influences of the fever, led to an early weakening of the heart wall. The fact that as convalescence advanced, both aortic and mitral murmurs disappeared, leads one to judge that before her illness, when she was strong, there were no murmurs; and that, even before admission, a gradual dilatation of the left cavity of the heart had begun, shewing itself in disclosing a long hidden aortic lesion. In a few days more the cusps of the mitral valve allowed regurgitation from a continuation of the same process. This idea is merely the reverse of what is seen in most cases of endocarditis, as in rheumatism; for there is weakening of the myocardium in it, as in all fevers. In it, as convalescence progresses, the murmurs are reduced in intensity, and often disappear entirely, long before the soft granulations of the valves could have been altered by cicatricial changes. If, then, the restoration of tone to the ventricular wall does in many cases lessen or cause to disappear murmurs due to valvular lesions, then, in the present case, a loss of tone in the ventricular wall of a heart with valvular lesions can cause to re-appear murmurs which formerly existed. And as proof that this is the rational explanation, we find, as convalescence advanced, as tone returned, the murmurs vanished.

Such is my explanation of the cardiac phenomena observed in Case 2; but we will have to look elsewhere for the causes at work in Case 1.

In an hypertrophied heart, as in Case 2, slight dilatation could occur sufficient, perhaps, to allow of the re-appearance of former murmurs; and yet, the dilatation be not readily made out by the Clinician, unless specially watching this one point. But in Case 1, with a heart of normal size on admission, with no evidence of organic disease, dilatation sufficient to cause regurgitation would so enlarge the cardiac area of superficial dulness as to be easily recognizable. But the notes of the case say distinctly that there was no enlargement of the heart at any time during the course of the illness.

Nor could dilatation account for the systolic aortic murmur. An enlargement of the aortic orifice would lessen instead of increase the resistance to the passage onward of the blood. The cause of this murmur must then be either hæmic or endocardial.

Loomis, in differentiating murmurs due to lesion of the aortic valves, from hæmic murmurs heard in somewhat the same areas, says: "Anæmia produces a murmur that is heard loudest in the carotids and is accompanied by a venous hum. In aortic disease, the murmur has its maximum intensity at the second sterno-costal articulation of the right side and is not accompanied by a venous hum." In this case the point of maximum intensity was at the aortic cartilage, and there was no venous hum, although it had been especially looked for.

I found several references to systolic apex murmurs being met with in fevers; but Loomis, while speaking of these, says: "There are no symptoms of obstruction present with febrile murmurs, while they are frequently present in endocarditis." Thus, he would at once exclude an aortic systolic, which is an obstructive murmur, from the febrile class. Nothing remains, then, but to acknowledge endocarditis as the cause, and if so, then the mitral murmur first heard must also be from the same. We have, then, a case of endocarditis in typhoid, following the usual course, attacking first the mitral valves, and a few days later the aortic.

What reference this endocarditis had to the symptoms of collapse, described as having been seen on the 18th day of the fever, and a second time on the 28th day, needs inquiring into.

We can imagine a myocardial cause at work, which would so weaken the cardiac walls as to cause a muscular incompetency. But such a state would declare itself by dilatation of the organ, which we know did not occur; and also by embarrassment of the pulmonary circulation. But this, too, was looked for and not found. If the heart were the organ mainly at fault, we would have found proof by physical signs. The valvular lesion could not have been the cause any more than a muscular incompetency, for it also would have shewn itself by engorgement of the pulmonary circulation

Where, then, was the greater part of the blood? It was not

in the cutaneous structures or the extremities, as evinced by the extreme pallor and coldness of surface. It was not in the bowel, where it had been diagnosed to be, for the stools proved the negative. It was not in the chest, for the heart had too little blood for the needs of the circulation, and the lungs were not engorged. It must, then, have been stagnating in the dilated veins of the splanchnic area, which area is capacious enough to hold all the blood in the body.

Bristowe, in discussing collapse, accounts for the depression of temperature, as far as regards the face, limbs and other exposed parts, by the comparative failure of circulation in them. "But," he says, "that this is not the sole cause of that depression is obvious from the fact that the internal temperature, instead of rising, as under such circumstances it should normally do, itself tends to diminish, and sometimes diminishes rapidly. It is clear, indeed, that there is throughout the organism a more or less complete arrest of those disintegrating processes upon which the maintenance of the temperature of the body depends, and presumably also, a more or less complete arrest of those vital processes, with which these latter are intimately interwoven."

That he considers this due to nervous action is plain, from his concluding paragraph on this subject.

"We have pointed out the not infrequent dependence of collapse or syncope on affections of the mind, and on many other conditions, which can be operative only through the medium of the nervous system; and we have enumerated the various phenomena referrible to the nervous system, which attend and characterise a large proportion of cases. These facts are sufficiently suggestive. But when we look a little more closely into the matter, and consider how many different causes of different operation, equally produce the same collective phenomena of collapse; how rapidly these phenomena come on, and how universally the organism is affected by them; how impossible it seems that a smash of the leg, a perforation of the bowel, or an agony of terror, should directly arrest the chemical changes going on throughout the organism, and so reduce the temperature of the body, or should directly influence the action of the heart and arteries; it is impossible to doubt (what many other considerations tend to prove), that all the phe-

nomena of collapse are directly traceable to the operation of the nervous system, not, however, of the brain or cord, but of that department, namely, the sympathetic, which presides over circulation, nutrition and the functions of the various organs, including those of the brain itself."

In the case under observation, we have no crushed leg or violent emotion to give the initiative impulse to the sympathetic system; but we have in typhoid a lesion, of that area most richly supplied by the sympathetic, an ulcerative process in the intestine, a reflex of whose irritation is the factor looked for.

In the *Lancet* of 1880 I found a short article on "Sudden Death in Typhoid Fever." The author says: "The occurrence of sudden death in typhoid fever, without any hæmorrhage or perforation to explain it, has been variously accounted for. According to Dieulafoy, it is always due to syncope, a reflex result of the intestinal lesion."

Thus I account for the collapse observed in Case 1. It was due to a reflex of the intestinal lesion, acting through the sympathetic nerves and manifesting itself by a dilatation of the veins in the splanchnic area. The withdrawal of a large quantity of blood from the general circulation, or the stagnating of it in this manner would produce the same constitutional effect as an actual hæmorrhage, namely, collapse.

INFLUENZA IN ITS RELATION TO EYE DISEASE.*

By J. W. STIRLING, M.B., &c.

While even yet the exact etiology of the influenza is enveloped in doubt, it cannot but be of import to study its action on the different organs of the body, altering their functions, setting up certain diseases, or modifying the course of diseases already existing.

Whether in *la grippe* one has to do with a special pathogenic organism or a miasmatic infection is an open question. In Symes Thompson's late work on the subject, Rollo Russell's theory of its origin is dilated on; it is entertaining in respect of its novelty and far-drawnness. The theory is: That the contagium of *grippe* is air borne, and originates in those districts of China devastated by floods in 1888. The deposit of alluvial soil thus silted up, not being secured by vegetation, upon being dried by the sun, was carried as dust into the air by the summer winds, in such clouds as to obscure the landscape and almost hide the sun. Dr. Thompson considers this dust might supply the raft to convey the microbe. Hence we would have to thank the celestial and his flowery land for the epidemic of *grippe* as well as "Ab-Sins" and cheap labour. The theory is pretty, but very unnecessary when we consider that the spread of the disease from one district to another was no quicker than could be accounted for by personal contact or human intercourse.

Of course simultaneously with the *grippe's* appearance the medical mental system was on the rack until it should discover a bacillus. That it was caused by a germ there could be no doubt from its course. Finally, Fischel of Prague announced at the International Congress held in Berlin that he had discovered a pathogenic micro-organism in the blood of six influenza patients. The intra-venous injection of this into dogs and horses set up a well-marked influenza; and curiously caused interstitial keratitis in two of the dogs, and superficial keratitis in four. This seemed pretty conclusive evidence, but (and there is always a "but" in these experiments) there was one missing

* Read before the Medico-Chirurgical Society of Montreal.

link,—it had not been tried on man. This organism is rapidly destroyed in water, and ceases to grow after eight days in sterilized water. However, all this requires further elucidation and proof.

Now, as to the main subject of my paper—la grippe in its relation to eye and ear diseases—I will first treat of the eye, enumerating cases out of my own practice as well as those I have collected.

With the onset of the attack, or very shortly after, there was, in a great number of the cases, the irritative, watery, pale-red form of conjunctivitis associated with the photophobia and lachrymation. In some few cases the photophobia was lacking.

In passing, I might refresh your memory here by the fact that photophobia is the only example in the body of the transmission of a stimulation from a nerve of common sensation to one of special sense—the V to the optic. This is no reflex in the ordinary sense of the term. The stimulation from the V nerve does not give rise to irritation of the fibres of the optic nerve so as to cause light sensations, but it causes the functional activity of the optic nerve, which is ordinarily painless, to be painful, sometimes intensely so.

The conjunctival hyperæmia and catarrhs appeared to be just part and parcel of the general catarrh of the lachrymal drainage apparatus and of the nose, throat, etc.

Of the cornea, the various lesions observed were interstitial keratitis, interstitial punctate and dendriform, keratitis of Fuchs and pustular keratitis; also ulcers with hypopyou and perforating ulcers.

These must be considered as mainly of neurotrophic origin consequent on the great depression following the onslaught of the grippe and not due to any particular germ.

In a case of my own, as well as in the reported cases, the corneal lesion came on with, or very shortly after, grippe, and in previously sound eyes, so that the causal connection can hardly be doubted. These lesions of the cornea, however, cannot be looked on as directly due to the influenza; but the great vital depression occurring, for instance, in the strumous and those

predisposed to interstitial and other forms of corneal trouble would favour the outbreak of the same. Once the lesions had appeared, they were marked for their obstinacy and resistance to treatment. For instance, in the case of ulcers of the cornea, they either rapidly spread or else remained sluggish, so that all temporizing measures had to be abandoned and active means forthwith adopted.

Another peculiarity of these lesions was a comparative immunity from pain, which is a peculiarity of many neuropathic cases. In one case I had, the cornea seemed simply to necrose without any inflammatory reaction or pain, the lesion tending to spread rather superficially than in depth, and resulting in a marked ectasia of the cornea. This case finally healed well after repeated paracentesis.

Another type of neuropathic lesion was the inflammatory or irritative, as represented by phlyctenulæ and the subsequent superficial vascular ulcer. Here, from defective nutrition and depressed physical state the V nerve, together with the general nervous system, is in an irritable condition; from the resulting abnormal nerve stimulation a cell proliferation occurs about the nerve terminals in the cornea, which, partly from rapidity of production and partly from defective nutrition, instead of maturing into proper corneal tissue, breaks down and forms small ulcers. These are often painful from their superficial position, as they expose the nerve terminals in the cornea's outer layers.

These are the main corneal lesions that I have observed, but no doubt almost every form might be observed dependent on the depressed physical and nervous state, resulting either from the irritative or paralytic state of the nervous supply subsequent to the defective nutrition.

Passing on to the iris, many cases of inflammation of the iris and the uveal tract have been recorded, but as a rule they ran a benign course; and those which I handled presented nothing peculiar. However, three severe cases reported by Herschmann, Eversbusch and Natanson are worthy of study, as throwing some light on the etiological connection with the influenza. In both Herschmann's and Eversbusch's cases only one eye was

attacked. The outbreak was on the ninth day of the illness; purulent choroiditis ran a rapid course, resulting in panophthalmitis and perforation of the sclera. In Natanson's case the inflammation of the uveal tract had a much more direful result in that it affected both eyes and led to complete blindness. The patient was a peasant; was attacked by grippe in Nov., 1889, which, after an eight days' duration, left him very weak and with persistent cough and expectoration. Complete recovery did not occur, and on the third week of January, 1890, an acute attack of pneumonia, with pleurisy, developed and ran a prolonged course. About the 4th of March the patient noted a veiling of the sight and floating objects before the eyes; two days later the left eye was completely blind, and on the following day the right eye, both with pain a few days later, the result of a binocular irido-choroiditis, the rapidity pointing evidently to embolism of the choroid vessels. Considering the floating objects and veiling of the visual field (evidently due to vitreous opacities), which occurred at the onset of the ocular trouble, were followed only after several days by pain, it is clear the disease started first in the choroid and spread afterwards to the iris and ciliary body. Eversbusch accentuates in his case the probability of the escape of an embolism into the uveal tract vessels, which explanation was supported in his case by the short interval elapsing since the outbreak of the influenza, namely, nine days. Also the probability of the embolic origin received support from the fact of the simultaneous development of a rapidly-spreading ulcer of the foot, likely also embolic. In Natanson's case, although the eye symptoms did not supervene until four months after the grippe, still, them and the pneumonia he considered as being of embolic origin. He refers to the many bacteriological discoveries in influenza—to the presence of the micro-organisms causing inflammation and suppuration in different localized areas; *e.g.*, streptococcus and staphylococcus in the lung and staphylococcus discovered by Eversbusch in panophthalmitis. He considers that by these one obtains a secure basis for the comprehension of the embolic processes under consideration. Eversbusch even considers the probability of a metastatic origin of the eye complaint not to be too far forced.

In fact there are very few vascular areas in the body which have escaped the inflammation and suppuration during this epidemic ; for example, meninges, brain, ear, eyelids, heart, lungs, pleura, nerve, etc. One can hardly doubt of the bacterial nature of these secondary affections. The fine meshes of the choroid plexuses would especially favor this.

One important point Natanson draws attention to, and that is the great variation in the intensity and extent of these lesions of the uveal tract after "grippe," viz., hyperæmia of the iris, iritis alone or with cyclo-choroiditis, choroiditis, serous, plastic and purulent, with or without accompanying iridocyclitis. These variations present a marked analogy to the corresponding sequelæ of recurrent fever. There is a second condition, also, of marked similarity in the time of occurrence in the cases under consideration. The time varied from nine days to four months after the grippe, whilst just the same occurs after febris recurrens, a few days to several months being the variation.

Next passing on to the optic nerve, a large number of cases of inflammation of the nerve have been reported, passing on to partial or total atrophy. Curiously, nearly all were cases of retrobulbar neuritis, with, at the outset, no fundal change to be seen by the ophthalmoscope, but later, atrophy appearing. Sometimes the lesion was binocular, sometimes unioocular—either total or partial. As no cases have yet come to section, the immediate cause is not known. Very possibly in many a perineuritis ; in some a meningitis accompanied.

Further, glaucoma has been observed in several cases ; the cause of this is not hard to find, if one takes into consideration the mechanism of glaucoma. As we all know, glaucoma is characterized by increased tension of the eye, due to increase of the fluid contents of the eye. It depends on an abnormal condition of the secreting mechanism, the emunctories and, or of, the secretion itself ; the main cause being a hypersecretion into the eye and a defective outflow therefrom.

The drainage channels of the eye are mainly at the angles of the anterior chamber of the eye, by the Schlemm's canal and Fontana's spaces ; there is also a slighter outflow about the optic nerve. Now the blocking of these anterior drains must lead to

retention of the fluids in the interior of the eye and the consequent rise of tension. It occurs in this way. The main secretion into the eye is from the ciliary processes. This passes round the edge of the lens through Petit's canal into the anterior chamber and out by Fontana's spaces and Schlemm's canal. In advanced adults, among whom glaucoma generally occurs, the lens nearly fills Petit's canal, the circumlental space being very small. Now, if from any cause any marked swelling of the ciliary processes occurs, as in straining the eyes, or as in venous congestion due to any depressing agency—*e.g.*, grippe,—the circumlental space becomes blocked, filtration cannot proceed freely from the posterior into the anterior chamber, the pressure behind the lens of the accumulating fluid pushes it forward and with it the iris, which is forced against the cornea, and completely blocks the angle of the anterior chamber. A vicious circle is thus formed.

Remembering this, and considering the great depressing effect of grippe on the vascular system, one can easily see how it would cause venous congestion of the ciliary processes, and in those predisposed to it, the resultant glaucoma. One or two cases of acute inflammatory glaucoma are reported associated with purulent choroiditis. Here the glaucoma would be secondary to the choroiditis, which latter would likely be of embolic origin, on which we have already dilated in speaking of inflammations of the uveal tract. Cases of general panophthalmitis have been reported, evidently secondary to an embolic purulent choroiditis.

Next as to the orbit. Purulent inflammation of the cellular tissue has occurred, evidently of embolic origin, which is not to be wondered at considering the numerous metastatic or embolic cases which have been reported after purulent meningitis or post-partum, etc. Fuchs reports four cases. In one it was of the purulent form, which spread to the interior of the eye and set up suppuration there; in the pus he discovered the Fränkel-Weichselbaum pneumococcus. The other three cases resolved without going on to pus formation.

The terminal circulation in the lid would favour the lodgment of an embolus, and, true enough, we have several cases of abscess of the lid reported.

Abscess of the lachrymal sac is also to the fore, probably due to inflammation of the mucosa lining it, together with that of the nasal and ocular regions. From the swelling of the mucosa the duct gets plugged, the secretion is retained, irritates still more the surrounding tissue, until an abscess forms.

Lastly, one of the most marked results of the grippe, and, indeed, one of the commonest, is the weakening or paralysis of the muscular apparatus of the eye. Cases have been so numerous that it is superfluous to particularize. It is, of course, noted in the complaints of pain, etc., on reading and writing, due to weakness of the ciliary muscle and of the recti interni, although it is sometimes the externi or other muscles that are at fault. As one would suppose, these symptoms are more marked among "hypermetropes" or astigmatics. Of true paralyzes I have not seen any dependent on grippe myself, and the decision as to the cause must be always open to grave doubt, as we have the ocular paralysis in connection with tabes dorsalis often preceding that disease by months and sometimes years.

Now from a resumé, we may infer that the eye symptoms in connection with la grippe may arise in one of three ways :

(1) As in the conjunctival affections, a part and symptom of the primary disease.

(2) Embolic origin, as in the purulent choroiditis, or cellulitis, possibly the neuritis.

(3) From the asthenic condition of the patient ; *e.g.*, some of the forms of keratitis, one form of glaucoma, and in the muscular lesions.

We next pass to the ear diseases occurring during the influenza. It was mainly the middle ear which was affected ; happily, very rarely the inner.

Almost as far back as these epidemics have been reported, the simultaneous occurrence of acute otitis media has been marked. In 1580 Bœckel noted the occurrence of purulent otitis media in grippe. In 1729-30 Fuster noted otalgia and sanguinolent otorrhœa following grippe ; and again in 1732-33, in another epidemic, the same authority notes the occurrence of acute otitis with purulent discharge after influenza. In 1835

Ozanam wrote "that sometimes complications arise which render the disease graver and longer in duration, because to the early symptoms are added in some cases intense earache and swelling in the parotid and glands of the neck; at last the disease terminates with a discharge of pus from the ear, and sometimes, though rarely, with suppuration of the parotids."

This latter symptom of suppuration of the parotids does not seem to have been reported in the last epidemic, although it is easily comprehensible that in the depressed state of the physical system the swelling of the parotid which sometimes accompanies ear trouble could run on to suppuration.

Otherwise in the aural symptoms accompanying or following grippe, there has been in the recent epidemic, as in many other things, nothing new under the sun.

Although there may have been nothing new in the symptoms, we can certainly say there has been something new in the treatment, for we read of a French aurist, in what might be called the aural dark ages, treating the purulent discharge of acute otitis media by filling up the ear with plaster-of-paris. Of course the discharge stopped, and the majority of patients stopped, too—like my grandfather's clock—never to go again.

The most marked peculiarity about the acute otitis media was the rapidity with which the inflammation spread up the Eustachian tube from the throat and seized the middle ear, accompanied by excruciating pain, an early perforation of the membrana tympani; and, again, it was frequently ambilateral, which is unusual. Finally, despite this early perforation, there was a great tendency to spread to the mastoid. Hence, after one's first experience in treating these cases as an ordinary otitis media acuta, one found that one had to push the most vigorous treatment and not trust much to nature and milder courses.

The rapidity and severity of the outbreak strongly obliged one to admit of the great probability of a bacterial origin, the germ finding its way by the Eustachian tube. Scheibe, in Munich, found in the purulent discharge of eight of these cases bacilli 1.6–2 cc. long and 0.4–0.6 cc. thick, and which were more numerous in proportion as there was a shorter interval

between the outbreak of the influenza and the onset of the otitis, and also as the pain was greater. Scheibe thinks these rod-like bacilli may appertain to the influenza, as they are not found in the other forms of purulent otitis media.

It is curious how very few affections of the auditory nerve have been reported as compared to the optic nerve. For generally the auditory nerve, of all others, is the most susceptible to any toxic—for instance, in quinine poisoning, diphtheria, salicylates, etc.

There is one point in regard to the pain in the acute otitis media—it persisted in many cases unabated for several days after the spontaneous or operative opening of the membrana tympani. A big percentage of my own cases, as also of those reported, spread to the mastoid despite most strenuous measures to prevent it, until latterly I was prepared to operate on the mastoid very early, much earlier than I would in an ordinary case of mastoiditis. The discharge in all these cases of acute otitis media was markedly hemorrhagic. Hernet tried inoculation of this discharge on guineapigs, but with negative results.

To sum up, the characteristics of the post grippe otitis media acuta were: 1. Rapidity of onset. 2. Severity of pain persisting after perforation. 3. Tendency to be ambilateral. 4. Tendency to spread to mastoid. 5. Resistance to milder means of treatment. 6. Once established, its obstinacy and persistence. 7. Hemorrhagic nature. 8. Fever. 9. Swelling, etc., of surrounding parts.

GYNÆCOLOGICAL REPORT.

(Continued.)

BY T. JOHNSON-ALLOWAY, M.D.,
Instructor in Gynæcology. McGill University.

CASE X.—Aged 45 years; married eight years; one full-term child six years ago. Has had two miscarriages, last one eighteen months ago. Menstruation irregular, varying between three and six weeks. Suffers from dysmenorrhœa; leucorrhœa profuse; complains of constant pain in left iliac region and back; bladder functions normal; constant and severe headache; complains of being breathless on exertion and suffers much from exhaustion.

Examination.—Perineum and pelvic floor destroyed and impaired in function. Uterus very large, bulky, and lying down in retroversion. Cervix bilaterally lacerated and hypertrophied. Prolapse of both anterior and posterior walls of vagina. Heart enlarged, and suspicion of some degree of fatty change having taken place.

This patient had been gradually losing strength and ability to do any housework whatever. She complained of the constant bearing-down feeling in the pelvis, to which she attributed all her trouble, and that this feeling became more evident and intolerable as she grew older.

Treatment.—After confinement to bed for a week or so, I removed the cervix, repaired the perineum and pelvic floor, and shortened the round ligaments. This patient made a good recovery, but did not regain strength for at least six months after her return home, on account of the cardiac trouble. She is now, however, quite strong, and has been relieved of the feeling of loss of pelvic floor support. The uterus is reduced much in size, and is resting in anteversion. Her heart has improved under digitalis, and the whole result has been satisfactory.

CASE XI.—This was a very interesting case, in so far that she was completely relieved of symptoms induced by a retroverted and fixed uterus, by massage.

Age 23; married two years; no pregnancy; menstruation every three weeks, very scanty, duration being two days. There

was severe premenstrual pain ; no leucorrhoeal discharge ; some pain at times in back, but severe and constant pain in left iliac region of a burning character and confined to a small area. No headache, nausea, nor bladder trouble. The principal cause of complaint on the part of this lady was the severe and constant burning pain in the left iliac region. This condition rendered her very miserable, melancholic, and produced a general loss of health which became apparent to all of her friends.

Examination.—Vagina normal ; uterus retroverted, low down in pelvis, with fundus thrown strongly over to right side. There was no pain nor tenderness on right side of uterus, but over left iliac region and in base of that broad ligament there was excessive tenderness on bimanual examination. No mass, however, could be felt. The cervix was congested and elongated, but no evidence of endometritis. The uterus was firmly fixed in its retroverted position, and could not be moved by the ordinary means.

The case was not one in which I could have restored the uterus to its normal position by shortening the round ligaments, and on account of her wish for maternity and her youth, it occurred to me that I would try uterine massage by a method I have before spoken of in these reports, and at least give her a chance to save her ovaries, the left one of which I believe yet to be involved in an inflammatory exudation. Accordingly I put her to bed on hot water douches, and every second day forced the fundus uteri as far forwards as possible, stretched the adhesions and shortened ligaments to the extreme point of endurance on the part of the patient. This treatment, combined with rest in bed, purgatives and low diet, enabled me in the course of two months to considerably elevate the fundus, and to do so without causing much pain. I could not, however, succeed sufficiently to warrant the introduction of a pessary. The end of July was now approaching, and the weather becoming very hot, the patient suggested to me the advisability of her going to the seaside and return in the autumn for further treatment. I consented to this proposition and left shortly afterwards for Europe. In October she called on me, and to my surprise stated that she had not menstruated for the past two months

and that she was then close to the third period. I examined and found her advanced at least two months. The uterus was rising to a forward position, was soft, enlarged, and straightening itself towards the centre of the pelvis. The other ordinary evidences of early pregnancy were present also. The interesting feature in this case is that many surgeons would have removed the appendages at once, and I would certainly have agreed with them, in that it was the proper thing to do, if the patient objected to a prolonged course of treatment, and if she had been sterile a few years longer than this patient had been. By this latter proviso I mean a good deal. If a young married lady should be unfortunate enough to contract a unilateral pelvic inflammation involving the tube and ovary of that side, with exudative thickening of the peritoneal folds, the uterus will be in a short time drawn, either by its cervix or fundus, to that side through shortening of these folds, and gradually the fundus will be turned backwards at the same time into the well of the pelvis. But I wish to be understood correctly on this point. The uterus may not be fixed in its retroverted position by definite adhesions or inflammatory remnants stretching between the peritoneum covering the fundus and the adjacent peritoneum of other parts, but that the uterus is fixed in its position by strong traction on the part of the *shortened* pelvic ligaments of that side. I have proved the truth of this teaching (which is that also of Schultz's) by first being satisfied of the utter impossibility of replacing a retroposed uterus from what I supposed could only result from inflammatory remnants, and found on opening the abdomen that the fundus was free and easily brought up by aid of the fingers. The advantage obtained from the acquirement of this knowledge consists in being able to give our young married patients a chance towards maternity, provided there is only one side involved in the inflammatory disease, and there is also a healthy endometrium, as in the case related.

There is, however, much difficulty in carrying out this treatment. The manipulations require to be done with the greatest care, and the amount of force which can be tolerated without risk of further injury can only be acquired by constant experi-

ence. You may also make a mistake in diagnosis, and rupture a pus tube or ovary abscess; in such a case you should be prepared at once to do laparotomy and remove the diseased parts.

CASE XII.—Age 27; married four years, one child two years of age. Menstruation very profuse and very irregular; the flow would cease for a week and then return, would remain absent for two weeks probably and return again. During menstrual intervals there was a profuse muco-purulent leucorrhœa. There was, as a rule, severe menstrual pain and at times intermenstrual, micturition frequent, but unaccompanied by pain. Has severe and constant headache with nausea. This patient has been a resident of the Southern States during the past two or three years, and has suffered severely from malarial fever. She is anæmic, and much reduced in strength in every respect.

Examination.—Perineum lacerated; vaginal walls much relaxed and pelvic floor impaired in function; uterus enlarged, chronic metritis, tender and retroverted; cervix bilaterally lacerated, cystic, and the seat of proliferating endometritis; region of left ovary and tube full and exceedingly tender to the touch.

The case of this lady was a somewhat difficult one to decide definitely upon, as regards the nature of the operation which would give the best results, and at the same time be duly conservative. The condition of the left appendages—fullness with intense suffering during a gently conducted bimanual examination—pointed towards a rapid cure by their removal. The appendages of that side were undoubtedly inflamed, and morbidly influenced by plastic exudation. But was there no other method of treatment but by laparotomy? The patient was young, had borne a healthy child within two years. The disease of the appendages was unilateral. She had had no prolonged rest-treatment.

The patient was put to bed for five weeks, after which the hypertrophied cervix was removed by Schröder's method, and the perineum restored by the flap-splitting method. I examined this patient three months after the operation; there was not the slightest tenderness of the pelvic floor, and no fullness to be felt in the left side of the pelvis.

CASE XIII.—Aged 42; married twenty-two years, never pregnant. Menstruation had been regular until two years ago, since when it had been irregular. She stated that the discharge would be prolonged, sometimes to last through the entire month, and that there would often occur an unaccountable and sudden staining of her underclothing. She had very little pain beyond some backache at times. She would not allow an examination to be made by her local physician, so he advised her to come to Montreal.

Examination.—On separating the labia a red mass about the size of a filbert was seen protruding from the meatus urinarius. This proved to be a mucous polyp growing from the anterior wall of the urethra, close to the meatus. The small tumor would bleed on any and every slight cause, and give rise to the impression that she was either menstruating irregularly or was suffering from malignant disease. So large a mucus polyp is very rare in this position, but though rare, it is worth bearing in mind that such a condition does sometimes occur.

CASE XIV.—Age 30; married fourteen years. Menstruation regular, duration four to five days; no severe pain during menstruation. Has had three full-term children; six miscarriages, principally at about second or third month. Two of these miscarriages occurred within three months of present consultation. Has a profuse leucorrhœal discharge; some pain in back; urinary function normal, but quantity small and very offensive. This patient states that she suffers from extreme nervousness; has nightmare and most peculiar nervous sensations, as "floating in the air," etc. She is much emaciated, anæmic, and there is a complete loss of energy, with a preconceived idea that she will become paralyzed or insane.

Examination.—Perineum lacerated; cervix enlarged, bilaterally lacerated; segments everted; proliferating endometritis, when touched will bleed; utero-sacral ligaments much contracted, pulling uterus upwards and cervix backwards, placing organ in anteversion. There was no evidence of disease of appendages, simply chronic metritis, resulting from a neglected cervical laceration.

Treatment.—This patient was put to bed on rest-treatment,

with massage and faradization, absolute seclusion from friends, etc., for the period of six weeks. At the termination of this course the cervix and perineum were repaired. Her convalescence was normal, and although she was by no means free from the strange hallucinations mentioned, she was much improved in strength and general health. Four month after the operation, however, I had a visit from this patient, and the improvement was very apparent. She stated that she had had of late none of the nervous symptoms before complained of, and that she was as strong as she ever wished to be. I think we may fairly attribute the nerve exhaustion in this patient to the constant drain associated with the diseased endometrium and cervix.

CASE XV.—Age 36; married nineteen years, one child 18 years of age; has never been pregnant since. Menstruation regular, as a rule, but sometimes it will return at the third week, especially during the past two years; duration five to six days. She suffers considerable pain during menstruation, chiefly in back, hypogastrium and iliac regions. Complains of fulness in head, but not of decided headache. Suffers from pain down the spine. Has had frequent micturition and of a painful character during the past six months. Urine free from albumen and casts.

Examination.—Perineum lacerated; vagina lax; integument forming posterior commissure of vulva can be lifted up to a level with clitoris, and side traction applied to vulva and vagina shows an enormous cavity due to extensive destruction of pelvic floor. The uterus is strongly anteverted; it is enlarged, very hard, heavy and tender; it is mobile, can be pulled down to introitus without causing pain, Cervix is greatly hypertrophied and extensively cystic. The original laceration is now filled up with cicatricial tissue, and in consistence feels as hard as cartilage. There is a profuse discharge of mucus from the uterus. During bimanual examination the right ovary can be distinctly isolated; it is enlarged and very sensitive. The left ovary can also be felt, but is of normal size and free from pain on moderate pressure. The tubes on both sides are free from disease. This patient presented a very interesting problem. Were her symptoms due to this enlarged and diseased right ovary, or were they due to chronic metritis and the constant uterine discharge?

Treatment.—After two weeks rest in bed and preparatory treatment, the uterine cavity was curetted with the sharp instrument, the cervix amputated, and the perineum and pelvic floor restored by the flap-splitting method. This patient left for home three weeks after the operation, feeling fairly well. She has since written me to say that she feels quite restored to health, is able to conduct a large millinery business, and does not think she requires any more treatment at present.

This case is only one of many I have experienced. Their ill-health, and especially that which pertains to the nervous system, is without doubt due to the prolonged albuminous drain which these old cervical lacerations with chronic metritis entails. And there is no form of treatment which produces so radical a change for the better like that which was carried out in this particular case. And what makes the result so valuable is, that it is permanent. Emmet's trachelorrhaphy in old cases will produce no good permanent result whatever, as the central diseased portion is left untouched and hypertrophy of the cervix soon becomes re-established, with recurrence of the old symptoms. The manner in which the uterine cavity is curetted is also of importance in these old cases. The sharpest instrument should be used (Martin's I prefer), and the movements of the hand should be rapid and continuous; the pressure should be even and the stroke carried from fundus to cervix. In this way the ground can be gone over several times in one minute and every vestige of diseased endometrium removed. For a minor operation it requires a refinement of manual dexterity and skill unequalled by any other minor operation with which I am familiar.

(To be continued.)

Retrospect Department.

QUARTERLY RETROSPECT OF SURGERY.

BY FRANCIS J. SHEPHERD, M.D., C.M., M.R.C.S., ENG.

Surgeon to the Montreal General Hospital: Professor of Anatomy and Lecturer on Operative Surgery, McGill University.

New Methods of Treating Cancer.—Dr. Poucel, in an article (*La Semaine Médicale*, Sept. 10th, 1890) on the *Curability Diseases apparently Cancerous by the Interstitial Injection of Bichloride of Mercury*, states that he has lately been conducting a series of experiments in the Hôpital de la Conception at Marseilles. He has obtained rapid cure in a case of malignant pustule three days old by the injection of sublimate. These injections proved to him (1) the harmlessness of bichloride as regards the tissues, and (2) its efficiency in destroying microbes absorbed by the lymphatics. It occurred to him that this form of treatment was indicated in cancerous diseases, since the microbe (if there be one) is carried by the same channels, viz., the lymphatics. He submitted seven patients suffering from cancer to this treatment. The first patient, with cancerous ulceration of the right breast which had lasted six months, had the nipple retracted and the whole gland was nodular and indurated. The axillary glands were involved and there were some nodules in the skin. On the 19th of February injections were commenced into the tumor, preferably at the most indurated points. Three milligrammes of bichloride in solution (in three syringes-full of one gramme each with six punctures) were injected. There was no salivation, but a certain degree of inflammation of the breast. A month later the patient returned with the tumor much reduced in volume. The injections were renewed on the 12th of March and the three following days. The breast became much softer and more normal in appearance, and the tumor could with difficulty be distinguished. The nodules on the skin were next injected; four hours after the injections the nodules had disappeared. Some time afterwards the patient died of angina pectoris. Two other patients were treated without success—an old man aged 81, with osteo-sarcoma of the tibia, and a very

aged woman with extensive disease of the breast. His fourth case was a man suffering from cancerous disease of the anus. The tumor disappeared in twenty-three days with ten series of injections (three milligrammes every other day). Two other cases of scirrhus of the rectum were successfully treated in the same way. All these cases had been previously treated without effect by potassium iodide and mercury by the mouth. The seventh case was a tumor of the breast in a woman aged 58. The tumor was moveable, and there was no retraction of the nipple or involvement of axillary glands. This tumor entirely disappeared when treated by sublimate injections. Three months later there was no trace of the tumor. At the time of writing the paper he had four patients under treatment, and all were improving.

Dr. Poucel will not positively say that he has found out the proper method of removing cancers, but he has no hesitation in stating that tumors apparently cancerous will often disappear when treated by sublimate injections.

Dr. Owen Pritchard has lately (*Lancet*, Oct. 25, 1890) written a short paper describing his method of treating cancers by escharotics. The paper, which is called *Notes and Remarks on upwards of Forty Operations for Cancer with Escharotics*, gives some of the cases in detail. He looks on most kinds of caustic pastes, such as arsenical or chloride of zinc or Vienna paste, as, at the best, painful and very tedious applications. Dr. Pritchard's favorite paste is Michel's. It will do as much work in one hour as any of the others will do in a week. When properly applied, it will destroy completely the largest tumors of the breast in from eight to ten hours, and with care it may be so managed that the patient feels nothing whatever from beginning to end. The paste, which is not described in any text-book on surgery, is composed of one part by weight of asbestos cut small and rubbed down in a mortar into a fine powder and three parts by weight of Nordhausen or fuming sulphuric acid. These should be mixed together into a paste on a porcelain or glass slab with a glass spatula. This acid must not be confused with the pure sulphuric acid mentioned

in text-books, which is an exceedingly painful application, and simply chars and hardens the tissues. The application of the Nordhausen acid is not nearly so painful, and under its powerful hygroscopic action the tissues almost disappear and what remains of them becomes a soft, cheesy, non-adhesive mass of cells (?) which crumbles away when touched. Dr. Pritchard describes the application of this wonderful paste by giving notes of a recent case treated—cancer of the right breast in a woman aged 68, which had lasted four months. The nipple was retracted and the area for two inches around it ulcerated. The skin was adherent over the tumor. No enlarged glands in the axilla. On the evening of the 17th of May, 1890, the tumor was well painted over with a blistering fluid and the patient was given a one-grain opium pill. On the morning of the 18th the epidermis over the blistered area was easily removed, leaving a raw absorbing surface. Over this a small quantity of the hydrochlorate of cocaine was applied; it is not safe to use more than than $1\frac{1}{2}$ grains. At the same time one-sixth of a grain of morphia was injected subcutaneously. After waiting about ten minutes for the cocaine to become absorbed, a cake of the paste, freshly made, about one inch thick and sufficiently large to cover the whole of the tumor, was applied. Dr. Pritchard says it usually takes from 10–20 minutes for the Michel paste to destroy the skin, and during this time the patient suffers intense pain unless cocaine is used. In the case narrated the patient absolutely did not feel it, and by the time the local effect of the cocaine was passing off the skin had been destroyed and the hypodermic injection of morphine was beginning to have its proper effect. The paste was applied at 10.30 A.M. and the tumor was completely destroyed by 5.30 P.M. without the loss of a single drop of blood. The cavity was cleaned out and filled with asbestos, covered over with lint and zinc ointment, and then left for the night. The patient slept well, sat up next day, and since the operation has had no rise of temperature, According to our author, it usually takes twelve days for the eschar to separate, and during the latter part of this time the wound should be well syringed twice a day with a weak solution of permanganate of

potash, dusted over with iodoform, and poulticed. When the eschar separates it leaves a healthy granulating surface, which heals rapidly. In applying the paste great care must be taken to place the patient in such a position, by means of pillows and supports, that the tumor is exactly level, otherwise the acid of the paste will gravitate to the lower side and destroy that part only. An oozing of fluid takes place all around the edge of the paste within a short time of its application. This must be carefully sopped up, as it exudes, with small pieces of blotting paper or fine linen, otherwise it will run over the surrounding skin and cause unnecessary pain. To guard against any accident of this kind the skin around should be painted over with collodion. Cases are mentioned in which this paste has been applied where even the bone was involved and had to be destroyed.

Dr. Pritchard says this paste is especially suitable in cases of Velpeau's cancer, "en cuirasse," and also in very delicate, nervous old people and persons unfit for anæsthetics owing to cardiac and other diseases. He does not advise this mode of treatment where the axillary glands are affected. Dr. Pritchard has applied this paste to 29 breast tumors; one of these has been lost sight of. In 12 cases operated on eighteen months to two years ago, one died of recurrence in the liver, one of tetanus eight months after operation for recurrence, one from chronic bronchitis and asthma, and one of acute bronchitis. In these two latter cases secondary recurrence in the lungs was suspected, and in one there is local recurrence. The other seven have no return. Of ten cases, seven were free from recurrence after from twelve to eighteen months. Six cases treated in the last twelve months had, at the time the article was written, had no recurrence. In all these cases the malignant nature of the disease was certain, and the diagnosis was verified by other surgeons. The small number of local recurrences is remarkable, and Dr. Pritchard attributes this entirely to the mode of treatment. He also thinks that these frequent local recurrences in cases treated by the knife may be due to inoculation of other parts by the cancer cells conveyed on the operator's knife.

The results of treatment by escharotics, as described by those

who use them, is simply marvellous. One can hardly believe that the cases described were all of a cancerous nature, for in none were the axillary glands enlarged. Now this fact is remarkable, and few general surgeons, I imagine, operate in cases of genuine cancer of the breast without finding that in a very large proportion the axillary glands are affected, even when the disease is in its early stage. Quite recently I operated on two cases of breast cancer which had only been noticed for some three or four weeks, and yet in both cases the axillary glands proved, on microscopic examination, to be affected with scirrhus and not merely enlarged by inflammatory action. Dr. Pritchard's cases are given very loosely; the age of the patient, duration of disease, etc., are mentioned in two cases only. Where patients refuse to submit to the knife, and where the disease is absolutely localized to the breast, this treatment by Michel paste is worth a trial. No doubt the great success claimed by men such as Bougard of Belgium is due to the careful selection of cases, and to the fact that they see the cases very early. Bougard* reports 62 cases out of 162 patients operated on, a period of three years having elapsed since the removal of the disease. In 58 of the 62 cases the disease was confined to the breast alone, and the tumors were not adherent to the skin or the parts below, hence the stage of the disease was an early one. In hospital practice especially it is very rare to get a patient with cancer of the breast who has not an accompanying involvement of the axillary glands, and hence the statistics based on hospital experience are usually unfavorable; much more so than if taken from results obtained in private practice.

Surgery of the Gall-Bladder.—Kummell, in an interesting and lengthy article (*Deutsche Med. Woch.*, 1890, No. 15), which is quoted in the *Annals of Surgery* for October, 1890, says operative interference is indicated in cases of formation of gall-stones and their sequelæ, hydrops, empyema of the gall-bladder, closure of the common duct, and also in cases of tumors preventing the flow of bile. Interference is not so necessary in

* See Butlin on "Operative Surgery in Malignant Disease," 1887.

cases of gall-stone with biliary colic as in cases where the calculi set up inflammation in and around the gall-bladder, causing adhesions, ulcerations, perforations, etc. A case is cited where the gall-bladder was so distended that it was mistaken for a right ovarian cyst, and this after an examination under ether. Two days subsequently patient had severe pain in abdomen, vomiting and collapse, of which she shortly died. On opening the abdomen after death it was found full of purulent fluid, in which was a great number of gall-stones. The tumor, which, of course, was a distended gall-bladder, reached down to the pelvis and was adherent to the right ovary. [I saw one such case some years ago, where the tumor was diagnosed as ovarian. Operation was declined, and at the autopsy the tumor was found to be an immensely distended gall-bladder, attached by its extremity to the right side of the uterus. The patient was under the care of the late Dr. John Bell.]

Another good reason for operation is closure of the common duct with cholæmia. Cases of simple biliary colic are easy of diagnosis, but the slow chronic cases, with closure of the cystic duct, are more difficult. Jaundice is absent, and patient complains for a long time of pain in the right side or in the region of the liver. If it is possible to feel the tumor under the free edge of the liver, this is a great help to diagnosis. In empyema of gall-bladder there is a tumor, absence of jaundice, long existence of paroxysmal pains, and the presence of dull, heavy pressure in the hepatic region. Should the common duct be closed, there is, of course, jaundice and a history of previous attacks of biliary colic. The differential diagnosis between tumors of the liver and those of other organs is difficult and often impossible. Of all the operations, cholecystotomy is without doubt the oldest and safest. Cholecystectomy is an operation which is most radical, but often most difficult when surrounded by adhesions. It would be a most radical operation if the formation of gall-stones took place only in the gall-bladder, but it is well authenticated that gall-stones may be found in the liver.

In a paper by the writer (*Annals of Surgery*, Nov. 1890) on

cholecystotomy, a case is related where the diagnosis was most obscure, the tumor being taken for one connected with the bowel, and from the history and appearance of the patient probably malignant. Yet on opening the abdomen the gall-bladder was found to be made up of a large mass of inflammatory tissue containing three large gall-stones, and the chief part of the tumor consisted of an elongated portion of liver commonly called the lacing lobe. The tumor was freely moveable, and was situated to the left above the umbilicus. The patient made a rapid recovery, the biliary fistula closing on the 15th day.

Dr. J. C. Reeve, jr., of Dayton, Ohio, reports a case of cholecystotomy (*Cincinnati Lancet-Clinic*, Aug. 23rd, 1890). The patient was a woman aged 39, and had a tumor in the right lumbar region of the abdomen. It was supposed to be a distended appendix or colon, and it was not until an exploratory incision was made that the swelling was recognized as a distended gall-bladder. The bladder was stitched to the abdominal walls, and six days after the gall-bladder was opened without anæsthesia; a pint of clear fluid was evacuated and a small stone removed. The patient made a rapid recovery, the biliary fistula closing in three weeks.

Abscess of the Liver.—In a clinical lecture at Hyderabad by Surgeon Leahy, F.R.C.S., Eng. (*Lancet*, Aug. 23rd, 1890), he stated that he had treated fifteen cases of liver abscess by free incision and drainage under antiseptic precautions, with only two deaths. The drainage-tube should be large, and as soon as the discharge from the cavity of the abscess is sufficient only to stain the dressings, it should be removed.

Resection of the Liver.—At a recent meeting of the Academy of Medicine of Paris (*Lancet*, Aug. 23rd, 1890), M. Terillon recorded the case of a woman, aged 53, who was admitted into the Salpêtrière suffering from a painful tumor in the hepatic region. History of four years' duration. An exploratory puncture was made into the swelling and some fluid resembling that of a hydatid cyst was drawn off. Laparotomy was determined upon and performed April 1st. A portion of the liver about the size of two fists was drawn outside, and was found to be riddled

with innumerable small hydatid cysts, so it was resolved to resect this part of the liver. Around the base of the growth was placed an elastic ligature, and thus an artificial pedicle was created. The tumor was separated from the body of the organ and fixed outside the abdomen. Seven days were allowed to elapse to give time for adhesions to organize and shut out the peritoneal cavity. At the end of this time the now gangrenous tumor was removed with the ligature. In six weeks the wound was completely healed and the patient had regained her usual strength and weight.

Removal of Pancreas for Carcinoma.—Rugge records a case of removal of the pancreas for cancer. Patient, a woman aged 50, came under treatment for gastric symptoms, loss of appetite, constipation, and pain radiating from the epigastrium. A tumor was found between the umbilicus and left hypochondrium, hard, resistant, and somewhat movable. Retro-peritoneal sarcoma was diagnosed. Laparotomy was performed and the removal of the growth undertaken. The growth was found to be pancreas, the seat of primary carcinoma. The patient made a rapid recovery, but we are not told of the ultimate result.—*Medical Press and Circular*, Oct. 1, 1890.

New Method of Performing Gastrotomy.—Dr. Eugene Hahn describes (*Centralblatt f. Chirurgie*, No. 11, 1890) his method of performing gastrotomy by fixing the stomach in the 8th intercostal space; he first did the operation in June, 1887. Since then he has performed eight operations by this method; these compare very favorably with the seven cases performed by Fenger's method. The operation is performed by making an incision parallel to and 1 centimetre below the margin of the ribs in the fore part of the 8th intercostal space; a second incision is made in the 8th intercostal space, close to the junction of the 8th and 9th intercostal cartilages, in an oblique direction from above downwards. The parietal peritoneum is punctured at this point by forceps or knife and enlarged by spreading forceps. The thumb and index finger of the left hand are introduced into the first incision and the stomach sought for at a point corresponding as nearly as possible to the fundus. This is grasped by

dressing forceps and drawn through the 8th intercostal space until the stomach projects 1 centimetre beyond the skin. If some days are to elapse before opening the stomach, it is fastened to the skin with sutures which pass through the serous membrane only; but if an immediate opening is necessary, the sutures must go through the whole thickness of the stomach. By experiments on cadavers Hahn found that there was no danger in wounding the diaphragm if the incision were made between the 8th and 9th costal cartilages. The advantages are: (1) a small, contracted stomach is found with great certainty and can be fixed with less dragging; (2) the adhesion seems stronger and more sure than when the abdominal incision is made, and the contents of the stomach do not come into contact with the parietes to the same extent as in older methods; (3) nutrition is better established, because the food is introduced at some distance from the pylorus; and (4) no obturator or other means of closing the opening are needed afterwards, because the proximity of the cartilages prevents the fistula becoming larger.

Partial Enterocele.—Dr. Rudolf Trjebuky of Cracow (*Wien. Med. Woch.*, Oct. 11, 1890) reports a case of strangulated femoral hernia, in which it seems to have been clearly demonstrated during the operation of kelotomy that the hernial protrusion was of the form known as “partial enterocele” or Richter’s hernia; in this variety of hernia a small portion of the circumference of the intestine and not, as in Littré’s, a pre-existent diverticulum is constricted by the hernial orifice. Whilst the existence of Littré’s or diverticular hernia has never been questioned, there is still much difference of opinion as to the variety to which Mr. Treves has given the name Richter’s hernia. Roser holds that it can never occur in an acute and free form, and many German surgeons are of opinion that such diverticular protrusion of the intestinal wall is due to old adhesions between the surface of the intestines and the sac. In the case reported the nature of the hernia was diagnosed before operation. The patient, a woman aged 60, suffered from well-marked and severe symptoms of acute strangulation, and presented a hard and fixed tumor the size of a hazel-nut in the left

groin. The sac having been opened, a portion about the size of a kreutzer piece of dark strangulated hernia was exposed. The border of this was so closely constricted by the edges of the ring that much difficulty occurred in dividing the stricture. The whole loop of intestine was then dragged down and exposed, and the nature of the hernia proved beyond doubt that the strangulated portion consisted of an artificial diverticulum from the convex surface of the loop, which presented a marked contrast to the rest of the exposed intestinal wall, from which it was cut off by a deeply indented ring of a dark blue color, caused by the constriction. The diverticulum speedily disappeared after the release of the strangulated intestine. No trace of adhesion could be found between the intestine and sac. The symptoms of strangulation were much more acute and severe than is usual in cases of Richter's hernia.—(Quoted from *Supplement to British Medical Journal*, Nov. 8, 1890.

Acute Strangulation of the Intestinal Wall.—Schaeffer (*Deut. Med. Woch.*, No. 27, 1890) reports two cases of Littré's hernia, both of which were operated on and terminated favorably. In commenting on these cases Schaeffer remarks that in neither was there intestinal obstruction; indeed the diagnosis was made from the fact that, together with the symptoms of strangulated hernia, there were repeated spontaneous passages of gas and fæces. According to Laurents, who has observed twelve cases of this kind of hernia, obstruction develops nearly always in Littré's hernia, the evacuation, if observed, depending rather upon dislodgment of fæcal masses lying in the bowel beyond the seat of obstruction than upon the preservation of the continuity of the intestinal canal. The cases reported, however, passed flatus and solid matter repeatedly and spontaneously, and operation was indicated only by concomitant symptoms. This is an important observation, since dependence on Laurents' method might lead to unwise postponement of the operation.—(*Amer. Jour. of Med. Sc.*, Nov. 1890.)

It is curious how few of the standard English and American works on surgery mention Littré's hernia. It is not mentioned in Holmes' System of Surgery, in the International Encyclopædia

of Surgery, nor in Buck's Reference Handbook of the Medical Sciences and, Erichsen's and Bryant's Surgeries pass it by without notice. Most surgeons understand by Littré's hernia, a protrusion of a portion of the wall of the intestine and not necessarily a pre-existent diverticulum. Although Treves calls this Richter's hernia, still in the article in his Surgery by Sir William MacCormac, Littré's hernia is described as a rupture where a "portion only of the circumference of the bowel is involved in the hernial ring."* I saw, a couple of years ago, a well-marked case of Littré's hernia in an old lady aged 77. There was no obstruction of the bowels from fæces, and flatus passed freely, but there was intense pain, severe and uncontrollable vomiting, and tenderness over the whole abdomen. The pain was situated in the epigastric region, behind the ensiform cartilage. Some form of strangulation was diagnosed, but exploratory operation was declined. She lived three days, and at the post-mortem a portion of the circumference of the bowel was found strangulated in the internal inguinal ring behind a small mass of omentum; the strangulated portion was not attached by adhesions to the omentum, and the nipple-shaped projection disappeared on freeing the bowel, leaving a dark discolored circular portion which was in strong contrast to the rest of the bowel. There was no pre-existent diverticulum, although the situation of the strangulated intestine was in the ileum, about three feet from the ileo-cæcal valve, the usual site of Meckel's diverticulum. Without doubt operation would have relieved this case.

Suppurating Lymphadenitis of the Groin simulating Inguinal Hernia.—T. Saltzmann (*Finska lakar Dallsk. hund.*, Bd. 30, p. 374) reports a case of the above. A woodman, aged 42, suffered from a small tumor of the right groin, which, as it was gradually increasing in size and accompanied by disturbances of digestion, pointed to an inguinal hernia, and an operation seemed indicated. The patient had suffered from the tumor for four years, and it could always be easily pushed into the abdomen, but latterly every attempt at reposition was in vain

* A capital plate of such a hernia is figured in Bernard and Huette's *Operative Surgery*, by A. T. Norton, pl. 63, fig. 8.

and it became very painful; there was obstipation, but no vomiting. Operation revealed a hernia like cavity filled with a large mass of detritus; the spermatic cord lay to the outer side of the sac, whose thickened walls were continued up through the inguinal canal to the upper and posterior portion of the pelvis; here it communicated with a large retro-peritoneally situated cavity filled with the same substance as the cavity in the inguinal canal. Microscopic examination showed it to be made up of alveolar tissue, completely resembling lymphatic gland tissue.—(Quoted in *Annals of Surgery*, Sept. 1890, p. 216.)

Some years ago I had an interesting case in the Montreal General Hospital which simulated strangulated femoral hernia. The patient, a girl aged 19, when up on a step-ladder hanging pictures, suddenly felt something give way in her groin, and there was severe pain. She was put to bed, and on examination a tender swelling the size of a walnut was discovered in her right groin. Next day vomiting set in, and the tumor was excessively painful and tender; bowels constipated. On entering hospital she had a temperature of 101°, a tender, tense swelling in situation of right saphenous opening, vomiting and constipation. The case was looked upon by myself and other members of the surgical staff as one of strangulated femoral hernia, and taxis failing to reduce the tumor, operation was proceeded with. On carefully making an incision over the tumor, it was exposed and found to be an inflamed and enlarged lymphatic gland situated in the saphenous opening and having stretched tightly over it a small nerve, probably the crural branch of the genito-crural. The gland was removed and all the symptoms subsided. No doubt the vomiting and obstipation was reflex, and due to the stretching of the crural nerve over the gland.

Surgical Treatment of Acute Intestinal Obstruction.—At the meeting of the British Medical Association, held in Birmingham in July, 1890, Mr. J. Greig Smith opened the discussion on the above subject. His views appear to me new and worthy of attention. In cases where the obstruction is recent, he first, as he does in all cases, administers a full stimulating enema containing brandy. Anæsthesia is made complete. The incision

is made in the median line, below the umbilicus, and is two inches in length—(he commences a long incision and the introduction of the hand); through this incision the bowels are inspected, turned gently to one side and the other, pulled upwards and downwards. The piece of gut most distended with gas rises to the surface and often presents at the opening; congestion here is often greatest. A short inspection enables one to fix on the most likely coil; this must be followed up in the direction of increasing congestion and distension, and it will certainly lead to the point of obstruction. The obstruction relieved, the operation is completed, and the abdomen has only to be closed. In cases where the obstruction has lasted for a week or more, the patient's strength is waning, and he is no longer able to vomit fluids as rapidly as they are passed into the stomach from the irritated intestine; fluid is gradually replacing gas in the intestines and there is dulness in the flanks, and the fluid-laden intestines lie at the bottom of the abdominal cavity. The stomach is getting distended; distended coils of intestines are visible through the abdomen. Patient's features are drawn and pinched, and then cold and clammy; his efforts to vomit are unsuccessful. In this case anæsthesia is full of risk. The distended stomach should first be emptied by a stomach tube before anæsthesia is begun, and anæsthesia should be continued no longer than is necessary to make the parietal incision and place the sutures ready for tying. All further manipulations may be carried out without pain to the patient whilst he is recovering from the anæsthetic. The cause of obstruction is found and relieved in the same way as in the first case; in this case the intestine nearest the obstruction will be distended with fluid and not with gas. Although the cause of obstruction is removed, the intestinal contents do not pass on, because the bowel is helplessly paralyzed and powerless, and also because of the numerous kinks and flexions; and to relieve this condition Mr. Smith performs intestinal evacuation and drainage. The surgeon should sit down by the side of the patient and spend an hour or two there doing it. Mr. Smith states he has successfully incised the bowel, evacuated its contents, sutured the wound in it, and

returned it, but the bowel empties itself slowly, and to do this during anæsthesia greatly increases the collapse. Anæsthesia is continued only during the very few minutes necessary for making the incision and inserting the sutures. The relief of the obstruction and the intestinal drainage may be carried out while the patient is recovering from the anæsthesia or completely sensible. The patient should be completely enveloped in warm blankets and the area of operation only exposed. A distended but not inflamed piece of bowel is brought to the surface, and at the free corners of an area about an inch square four quill sutures penetrating the serous and muscular coats are inserted; these are tied two on each side to pieces of adhesive plaster carried round the back and fixed to the abdomen. The outer coats of the intestines are incised by a scalpel and then the gut is pierced by a large aspirating needle with a long piece of tubing attached to carry off the fluid. When the evacuation has been carried out to a sufficient extent the needle is removed. The small opening in the bowel is now closed by a continuous suture, the bowel thoroughly cleansed and returned, and the sutures in the parietal opening tied. If the evacuation is not readily accomplished, then a small drainage tube may be placed in the needle opening in the bowel and left there a day or two. Mr. Smith thinks it wiser to perform enterostomy than to spend much time in groping about for the cause of the obstruction. In the third case the condition is almost hopeless; if there is a small chance of saving the patient's life, anæsthesia would almost certainly do away with this chance, and any severe operation would be fatal, so here Mr. Smith advises merely the use of local anæsthesia to make the skin incision and carry out intestinal drainage as described above, and if such a case, by stimulation, can be tided over forty-eight hours, his life would probably be saved.

Rupture of Liver and Kidney; Laparotomy.—Dr. H. C. Dalton (*Weekly Medical Review*, Oct. 4th, 1890) reports the case of a mulatto, aged 28, who fell a height of twenty-five feet across an iron bar, the right lumbar region being the point of contact. He became faint, but did not vomit, and did not lose

consciousness. He was at once taken to the hospital, when no abrasion or contusion was found at the seat of injury. The urine was drawn off and found to be quite bloody; there was pain on pressure over the right lumbar and hypochondriac regions, and dulness in the right lumbar region as high as the axillary line. He suffered much pain during the night, and his temperature rose. Next morning the abdomen was distended, and tender and dull in both flanks. Believing that the liver was ruptured, Dr. Porter proceeded to open the abdomen, when he found a good deal of blood in the peritoneal cavity and some clots beneath the liver; on the posterior surface of the liver a large rent could be felt about three inches long. As Dr. Porter was unable to get at this so as to suture it, he packed it with gauze, leaving one end of each strip outside the abdomen, which was then closed with interrupted silk sutures involving skin, muscle and peritoneum. The patient had no bad symptom, and left the hospital five weeks after the accident the gauze having been removed on the second day.

Expectant Treatment versus Interference in Cases of Tubercular Joint Disease.—Mr. Watson Cheyne sums up an exhaustive paper on the above subject as follows (*Lancet*, Nov. 15th and 22nd, 1890): “Operative interference is desirable when chronic suppuration has occurred at an early stage, where the disease is localized to one part of the synovial membrane or bone; in many cases at a later stage, where there is a deposit in the bone along with general synovial thickening; in cases of diffuse synovial thickening, where expectant treatment has failed to arrest the progress of the disease; in cases where a better functional result can be obtained by operation; in cases, in adults, where deformities are present which can only be remedied by operation; in many cases where there are septic sinuses; in certain cases where phthisis is present or the general condition is such as to require the removal of the disease; in adults more frequently than in children; in the poor more frequently than the rich. Expectant treatment should be employed in the first instance in cases of diffuse synovial disease without suppuration, provided that there are no other reasons requiring operative in-

terference, and it should be persevered in so long as improvement follows; also at first in cases in children, where caseous deposits are present in parts where they cannot be reached without excision, or in cases where the presence of deposits in bone is doubtful; also in some instances where septic sinuses are present. In any case it should be persevered in longer in children than adults." Mr. Cheyne says that we can now cut into joints at an early stage while they are yet comparatively healthy, and remove portions of synovial membrane and bone without fear of doing harm by our operation, and with good chance of ridding the patient of his disease and getting a useful joint. The cures by the expectant treatment are often obtained only at a great expenditure of time, and after great endurance of pain and at a certain risk to the patient, and it by no means follows, because a good result is obtained in any given case by expectant treatment, that it would not have been wiser, and that in a number of similar cases the results could not have been on the whole better, had operative measures been employed.

Dr. Glück's Method of Inserting Ivory Joints as a substitute for Excised Ones.—At the recent Berlin Congress Dr. Glück read a paper (*Brit. Med. Journal*, Sept. 13th, 1890) and gave several demonstrations of a method by which he claims that it is possible to plant not only portions of bone, but whole joints. Whatever the ultimate possibilities of this plan may turn out to be, it at least merits a somewhat critical examination. Dr. Glück had a skeleton in the museum in which all the joints were replaced by artificial ones of ivory. A patient was shown with one of these ivory joints. It was a knee joint; the wound was completely healed, and, seated on a chair, he was able to both flex and extend his knee-joint through an angle of nearly 45° without any pain or serious inconvenience. He also showed a plan of employing an ivory splice for uniting two pieces of a long bone in which either an ununited fracture was present or a considerable loss of substance had taken place. Dr. Glück reported ten cases in which the plugs have been inserted into the cut ends of bones, and all made good, immediate recoveries. What are the prospects of ultimate success? The ivory may

possibly remain imbedded in the tissues and give rise to no further trouble, but this result is unlikely. The ivory plugs may act as a source of irritation, so much so that they will become loosened and form a sequestrum, or the irritation will set up an overgrowth of bone in the neighborhood, and thus a joint at first movable will be slowly enveloped in new bone formation and have its movements completely checked, and then complete absorption of the joint will only be a process of time. Of course time will show the result of Gluck's method, and we should be very much surprised if at the next Congress he still advocates the introduction of ivory joints. (See also illustrated article in *Archiv f. Klin. Chirurgie*, Bd. xli, Hft. 1, 1890.)

Koch's Treatment for Tuberculosis.—The announcement of the marvellous discovery of Koch has stirred not only the medical world to its depths, but also the world in general. The account of the cures effected reads like a fairy tale, and had the cure been promulgated by any other than Koch it would have assuredly been looked upon as the wild dream of an enthusiast, and so would have attracted but little attention. In the article by Koch (*Deutsch. Med. Woch.*, Nov. 14, 1890) we are assured that lupus can be positively cured by the injection of his lymph between the shoulders. In glandular disease and tuberculous disease of bone the living tuberculous tissue is destroyed and can then be removed by the surgeon. In joint affections the injection of the lymph causes necrosis of all the living tubercular tissue and so defines the extent of the disease, but it has no influence on dead tissue. The surgeon's occupation will not be gone, but rather increased, as it will be necessary for him to open joints and incise bones to remove the *débris* resulting from effects of the lymph injection. The remedy is too recent a one and too little is known about it yet to form an opinion, but it promises to be one of the most valuable discoveries of medical and surgical science. So much has been written about "Koch's cure" for tuberculosis that at present I merely mention it, and trust that in a future report personal experience will enable me to go more into details.

Early Diagnosis of Kidney Tumors.—Prof. Guyon of Paris

believes that surgical intervention is indicated, both for diagnosis and treatment, when characteristic hæmaturia and pain distinctly localized in one or other loin are met with, and in his opinion the time when the tumor is perceived must not be waited for. The cystoscope, though of service, is a defective means of diagnosis in his experience, and fails to declare which is the affected kidney. Periodic microscopic examination of the urine is needful before deciding that hæmaturia is absent.—(*Annales des Maladies des Organes Genito-Urinaires*, June, 1890; quoted from *Edin. Med. Jour.*, Nov. 1890.)

The Rupture of the Rectum by means of Petersen's Colpeurynter.—Dr. G. R. Fowler (*Annals of Surgery*, Aug. '90) records a case of rupture of the rectum by Petersen's dilating bag during an attempt to perform intra-peritoneal cystotomy. He attributes the accident to degenerative changes in the rectal wall. Only eight ounces of fluid were used with the bag. The patient survived the operation but a few hours, dying of shock. Two similar cases are referred to, and the conditions under which the use of the bag is contra-indicated are alluded to.

The Use of Skin from Puppies for Skin-Grafting.—Dr. M. E. Van Meter (*Annals of Surgery*, Aug. 1890) reports a case of skin-grafting with the skin of Mexican pointer puppies in a case of extensive ulceration from burns. The grafts took famously, and the writer thinks them superior to human grafts. In the *Lancet* for March 15th, 1890, Mr. Alex. Monro of Edinburgh reports a similar case. A young black and white greyhound was used.

Removal of the Gasserian Ganglion for Severe Neuralgia. Mr. Wm. Rose, of King's College, Hospital, London, reports a new and brilliant operation (*Lancet*, Nov. 1st, 1890) in a paper read before the Medical Society of London. The case was that of a woman with severe facial neuralgia which did not yield to prolonged medicinal treatment. At first the pain was limited to the course of the inferior dental nerve, and accordingly Mr. Rose stretched and divided that nerve where it enters the lower jaw bone, and also divided its mental branch at its exit from the bone. This operation was for a time successful, but after some

months the pain returned and then a portion of the inferior dental nerve was removed in its bony canal. This was successful for several months, but again the pain returned, and this time along the gustatory nerve. A third time Mr. Rose operated, exposing and dividing the gustatory and dental nerves in the pterygoid region. No permanent relief was given, so Mr. Rose determined to remove the Gasserian ganglion. He first excised the upper jaw; when bleeding had been arrested and the foramen ovale exposed to view, the pin of a half inch trephine was passed into the foramen and the ring of bone surrounding it was carefully sawn and lifted out. The Gasserian ganglion could then be seen lying upon the apex of the petrous portion of the temporal bone. The ganglion was loosened by passing an aneurism needle beneath it and removed in three or four pieces by the aid of a narrow probe-pointed bistoury and fine hooked forceps, the dura mater being uninjured. The bleeding was slight. The skin incisions were brought together in the usual way and dressed with cyanide gauze. The patient suffered somewhat from shock, but next day her general condition was satisfactory. The old pain ceased from the day of operation and has not since returned. The eye on that side became so disorganized that it had to be removed.

This operation reflects great credit on the boldness and dexterity of Mr. Rose, and is encouraging in those almost hopeless cases of facial tic, the victims of which will submit to any operation to avoid the extreme pain which makes life unbearable.

Successful Removal of Hydatid Tumor of the Brain.—Dr. Graham and Mr. Grubbe record a case (*Australasian Medical Journal*, July, 1890) in which a hydatid tumor was removed from between the dura mater and pia mater of the brain. The patient was a lad, 16 years of age, who suffered from severe headache, nausea, vertigo, double optic neuritis, with atrophy, loss of memory, and paresis of right arm and leg. A tumor involving the left motor area was diagnosed and Mr. Grubbe trephined over it; he found the bone very thin, not more than one-sixth of an inch thick, and on opening the dura mater a single simple hydatid cyst was seen and easily extracted. The

pia mater was intact. The cyst held 19 oz. of fluid. The patient recovered rapidly, and after six weeks was able to get up and walk, his memory returned, and he was in all respects well except for his blindness. It is believed that this is the first recorded case of the kind. Dr. Davies Thomas records three cases of recovery from cerebral hydatids, in one of which the cysts were passed through the nose and mouth; in the other two they were removed through incisions in the scalp after the tumors had perforated the cranium.—(*Lancet*, Sept. 13, 1890.)

Removal of a Calculus from the Ureter by combined Abdominal-Lumbar Section.—Dr. Rufus B. Hall reports a case of the above (*N. Y. Med. Record*, Oct. 18th, 1890). A patient had been ill for four to five years, and suffered from severe paroxysms of acute pain every five or six weeks. Never had hæmaturia; was perfectly free from pain in the intervals. Dr. Hall determined to explore by abdominal incision. When the patient was under chloroform a small tumor was discovered in the region of the left kidney. The abdomen was opened in the median line, and on introducing his hand Dr. Hall found an elongated, exceedingly thin-walled cyst, somewhat larger than the closed fist; below the cyst, in the direction of the ureter, a stone could be felt. It was clear that an impacted stone in the ureter had to be dealt with. The left hand was not taken out of the abdomen until the stone was removed. A lumbar incision was now made and the kidney incised, when a great rush of urine escaped and the cyst in the abdomen disappeared. With a forceps introduced through lumbar incision several attempts were made to remove the stone without result until a freer incision in the kidney was made and the sac invaginated by the hand in the abdomen. The wounds were closed and a drain placed in the kidney. The stone only weighed $3\frac{1}{2}$ grains. Patient recovered perfectly from the operation, going home in perfect health on the thirty-sixth day.

Treatment of Complete Prolapse of the Rectum.—Mr. Harrison Cripps, in speaking of the treatment of prolapse of the rectum (*Lancet*, Oct. 11th, 1890), divides it into palliative and operative. The palliative treatment, he says, is often very suc-

cessful in children. Attention should be first directed to the cause; if there is phimosis, stone, polypi in the rectum, or anything causing undue strain, it should be remedied. The stools should be passed with the child lying on the side. Cod-liver oil assists the general health and keeps the bowels regular. In adults, palliative treatment is not so beneficial. A small injection of eight ounces of warm water should be given before going to the closet, and after the motion one ounce may be injected and retained. If there be any superficial ulceration, a drachm of tincture of catechu may be added to the cold water.

Mr. Cripps is not in favor of cutting operations, but believes in the linear cautery. His method of operating is as follows: The contents of the bowels having been thoroughly cleared out, the patient is anæsthetized and placed in the lithotomy position. The prolapse is then made to protrude; four lines of cautery, a quarter of an inch wide, are now drawn along the bowel in its long axis—one in front, one behind, and one on either side. Should any veins be opened, they must be tied. The operation should be done quickly and the bowel returned before congestion and swelling makes it difficult. He prefers the actual cautery to Paqueclin's, as the latter cools too rapidly. A thick rubber tube is introduced for about five inches and strips of oiled lint arranged around this as high as possible, and between the oiled lint and tube is packed cotton wool with iodoform dusted on it. The internal dressings are only kept for a few days. The bowels should be kept confined by small doses of opium for ten days and then opened with small doses of castor oil and enemata. Motions should be passed lying on the side for at least six weeks after the operation. Mr. Cripps is quite satisfied with the results of this operation, and his experience coincides with Mr. Herbert Allingham's.

Raw-hide Plate for Intestinal Anastomosis.—Dr. F. B. Robinson of Toledo, Ohio, in a recent article (*N. Y. Med. Jour.*, Oct. 18th, 1890), advocates the use of the raw-hide plate as a substitute for Senn's decalcified bone plate. He has used it with great success in experiments on dogs which he has been performing for several years past.

The raw-hide plate is made by shaving the hair from the green hide of an ox; the hide is then cut into strips one inch wide and two and a half inches long, and perforated by a diamond-shaped aperture; four to six sutures are attached, and the plate can be then used, dried or green. The advantages are that they are easily prepared and easily absorbed, but not too soon.

Peroxide of Hydrogen in Suppuration.—Dr. Robt. T. Morris of New York strongly advocates (*Journal of American Medical Association*) the use of peroxide of hydrogen in all cases of suppuration, in sinuses, and other places where it cannot be easily got at. It is best to inject a small quantity, wait until foaming ceases, and repeat injections until the last one fails to bubble, then we know the cavity is chemically clean. Care must be taken not to let it come in contact with hair, as it bleaches it to a golden yellow color, and is the substance usually used by barbers and others as a golden hair dye.

Hospital Reports.

MONTREAL GENERAL HOSPITAL.

CONDENSED REPORTS OF CASES IN DR. MACDONNELL'S WARDS.

Chronic Endocarditis; Clinical illustration of the remote effects of valve lesions; Right Hemiplegia; Ulceration of gums on affected side; Sudden development of spinal symptoms.

Ann S—, a woman of middle age, admitted July 17th, 1890. Dyspnœa on exertion, palpitation, precordial pain, and œdema of the feet. Has had four children. No history of rheumatism. The present illness is said to have begun four weeks before admission, when she woke up in the night to find herself extremely breathless. In the morning both legs were swollen, but the left rather more than the right. There was also severe pain in the epigastrium. She continued at household work until forced to come to hospital.

Dyspnœa is very urgent; œdema of legs; visible pulsation in the carotids, brachials and radials; pulse 66, irregular, unobliterable, non-collapsing; no capillary pulse. Heart's impulse

is visible over a considerable area of the chest-wall, and it can be felt to be strong and heaving. The area of superficial cardiac dulness on percussion is increased, beginning vertically at 4th costal cartilage and extends transversely from midsternum to the areola of the nipple. The apex can be felt $4\frac{1}{2}$ inches from the left edge of the sternum. A harsh systolic murmur is audible all over the cardiac region, loudest at the apex, and very loud at the aortic cartilage. It is heard around the left chest and below the angle of the scapula, but not in the root of the neck or at the lower end of the sternum. The liver is decidedly enlarged, extending one inch below the margin of the ribs in the right mammary line. Spleen not enlarged. Total quantity of urine passed daily is normal; specific gravity 1030; contains a large proportion of albumen.

For the fortnight after admission there was improvement in the symptoms. Rest in bed and the administration of digitalis seemed to do her good, but at midnight on the 30th July she had a seizure, described as beginning in convulsive movements. Dr. McKechnie (house physician) found the right side of the body paralyzed and unconsciousness complete; increased deep reflexes on right side and ankle clonus; involuntary passage of urine; difficulty in swallowing. Consciousness soon returned, but speech was completely lost for some days.

Aug. 30th.—Discharged much improved yesterday, but to-day came back again with severe precordial pain. Heart's action tumultuous and irregular. Last night had a most severe attack of dyspnoea, for which five minims of amyl nitrite was given.

She was discharged in the middle of September, and re-admitted October 3rd. Both legs are œdematous, but the right more so than the left. Slight paralysis of the right side of the face with difficulty in articulation; slight deviation of tongue to the right. Decided wasting of the right forearm, especially of the extensors of the hand and supinators of wrist. Ankle clonus and slight exaggerated knee-jerk in the right leg. The urine is highly albuminous.

Oct. 7th.—The murmur at the aortic cartilage appears to be double. The systolic murmur is propagated upwards, but the diastolic is heard only at the base.

Oct. 24th.—A curious train of symptoms developed themselves to-day. There had been constipation, and during the preceding twenty-four hours she had been given twelve grains of calomel in divided doses without effect. An enema was then given with slight effect. After this the patient complained of intense pain in the abdomen. Two hypodermic injections of morphine, each of gr. $\frac{1}{2}$, were given during the night. On the following morning she still was in great pain, and complained of itchiness in the skin of the abdomen, which she was continually scratching. There is also pain complained of in the back. Pressure on the two lower dorsal and two upper lumbar spines caused her much pain. Bowels continually moving. The bladder function is unaffected.

Oct. 25th.—Hyperæsthesia of the abdominal muscles is diminishing in intensity. *The patellar reflexes are now absent*, as well as the superficial abdominal reflexes; the right plantar is slightly greater than the left plantar reflex; slight right ankle clonus.

Oct. 27th.—The new symptoms have disappeared; diarrhoea has ceased. Complains to-day of itchiness over the whole of the back, shoulders, and down the arms to the hands. Great pain inside the mouth. Two sloughy patches, one-third of an inch in diameter, inside the right cheek, one opposite the upper and one opposite the lower molars. There is also a sloughy surface inside the lip, slightly overlapping the middle line, but the greater part is to the right of the median line.

Nov. 5th.—Complains to-day of headache and dimness of vision. Dr. Buller reports both eyes to be in a normal condition.

Nov. 12th.—Mental condition changed. Melancholic and somewhat noisy. Became discontented and left the hospital.

The effects of valvular disease upon the whole system are well illustrated. The starting point of the endocarditis is by no means clear, but the period at which the failure of compensation began is plainly evident. It dates from four weeks before admission, when dyspnoea with epigastric pain and dropsy of the feet set in. The valvular disease is of old standing, as is shown by the large size of the heart. Evidences of the effects of long-

standing valvular disease upon other organs are afforded by the large size of the liver, which is probably on its way towards ultimate reduction in size; and by albuminuria. The attack of hemiplegia, probably from embolism, and followed by aphasia, occurred under our notice. The most interesting feature of the case was the attack reported as having taken place upon the 24th October. It is difficult to explain such an occurrence except by assuming the occurrence of some interference with the vascular supply of the cord in its lower part. Itchiness of the skin of the abdomen, pain in the back, and paralysis of the sphincter ani, are symptoms pointing to the cord and the loss of knee-jerk, as well as of the superficial abdominal reflexes point in the same direction,

Reviews and Notices of Books.

An Illustrated Encyclopædic Medical Dictionary. Being a dictionary of the technical terms used by writers on Medicine and the Collateral Sciences, in the Latin, English, French and German Languages. By FRANK P. FOSTER, M.D., with the collaboration of numerous other writers. Vol. I, 1888; Vol. II, 1890. New York: D. Appleton & Co.

This is a work, the second volume of which has just appeared, grand in conception and grand in execution. Nothing like it has been published; and it reflects the highest credit on authors and publishers.

In the preface we read: "The time was when almost all important medical writing was in Latin; hence the older medical dictionaries dealt for the most part with Latin terms only. But the science of the present age is recorded in no one language; to learn it, one must at least read its exposition in English, French and German. Each of these languages has its technical words, and words which acquire a special meaning in technical expressions, and it is only with difficulty, if at all, that their meaning can be made out from general dictionaries. This fact points to the need of a medical dictionary including the terms of

the three languages mentioned, as well as those of Latin or Greek origin or form." The editor remarks : " The value of a dictionary seems to me to depend upon its accuracy, the convenience of its arrangement, and its comprehensiveness ; and in the preparation of this work those qualities have been esteemed in the order in which they are here enumerated."

With the above all will agree. To illustrate the nature of the work by a single word, " artery." Its pronunciation in English is indicated ; then follows the synonyms in Greek, Latin, French, German, Italian and Spanish ; its definition, etc. etc. The whole article occupies in print 20 quarto pages, with 25 beautiful illustrations ; yet there is no diffuseness. There is no other work in English that we know of that furnishes a similar treatment of this subject which we choose simply by way of illustration. Several volumes of the book are yet to appear. When complete, it will remain as one of the greatest achievements in book-making in an age, as remarkable for publication as many other things. We feel no little pride ourselves in this great American enterprise, and wish it the highest success.

Diseases of the Eye. By EDWARD NETTLESHIP, F.R.C.S., Ophthalmic Surgeon to St. Thomas's Hospital ; Surgeon to the Royal London (Moorfield's) Ophthalmic Hospital ; late Ophthalmic Surgeon to the Hospital for Sick Children, Great Ormond street. Fourth American from the fifth English Edition, with a chapter on Examination for Color-perception by WILLIAM THOMPSON, M.D., Professor of Ophthalmology in the Jefferson Medical College of Philadelphia, Philadelphia : Lea Brothers & Co. 1890.

This work is written in the clear, concise style which characterize the author in former editions. The volume is but slightly increased in size, and the number of illustrations remains the same, but several of the old figures have been replaced by new cuts, and Professor Holmgren's well-known plate has been substituted for the colored papers of former editions, New matter of suitable character has been included throughout the work, and important changes are found in the chapter on operations.

The book will prove valuable to both students and practitioners, as the subject is ably treated in as brief space as is consistent with so important a branch of the profession.

Handbook to Dr. Koch's Treatment in Tubercular Disease. By EDWARD F. GRUN, M.R.C.S. and L.R.C.P., and WALTER D. SEVERN, Assoc. Roy. Coll. Sci. London: J. & A. Churchill, New Burlington street.

The authors deserve the greatest credit for being in the field so early with a handbook on Koch's treatment. A full and clear account is given of all the necessary details for carrying out this treatment. Examples are given of the reaction in various tuberculous disease following the injection of the lymph.

The work (about 70 pages) was composed, printed, published and in the hands of the reviewers in the short space of four days, an example of rapid book-building which reflects credit on editors and publishers. The authors studied the process of injection as carried out in the various Berlin klinik.

A Text-Book of Diseases of the Ear. By DR. JOSEF GRUBER, Vienna. 1 vol., 588 pp. Translated from the second German edition and edited by EDWARD LAW, M.D., and COLEMAN JEWELL, M.B. London: H. K. Lewis.

This book is a welcome addition to the rather scant library of works on the ear in the English language. The volume opens with a full account of the anatomy and physiology of the ear brought up to the latest discoveries. At page 33 the author devotes some space to the interesting subject of spontaneous dehiscences of the tegmen tympani, together with the various theories advanced as to their causation. Gruber holds that they are produced by an excess of that physiological process of absorption to which the air cavities of the temporal bone partly owe their existence. In describing the histological structure of the membrana tympani, he mentions the dendritic fibrous structure first observed by himself and existing in a fine layer just beneath the epithelium of the integument and mucosa.

Further on he describes a peculiar sort of cartilaginous groove

in which the handle of the malleus rests, and into which, and not directly into the handle of the malleus as heretofore believed, are the fibres of the membrana propria inserted.

In speaking of the tensor tympani muscle, Gruber says it is not inserted only into the inner border of the handle, but into the inner margin and anterior surface of the handle of the malleus. In exceptional cases a few fibres run to the posterior surface of the handle. It follows from this that when the muscle contracts the malleus is not only drawn inwards, but is also rotated more or less round its long axis, so that the posterior surface of its handle is directed somewhat outwards.

In the examination of patients' audition, the author insists, among other things, on the interval of time which elapses before the sound is perceived.

On page 133 is an interesting table of the different distances at which the sounds of the various letters of the alphabet can be perceived under the same conditions as marked out by Wolf and Appun.

Passing next to the therapeutics, Gruber describes his method of injection of fluid into the middle ear, through the Eustachian tube, without the use of a catheter. It is rather a ticklish method, and, as he himself says, had better be only used if the catheter for any reason fails.

In speaking of inflammation of the middle ear, six weeks is the limit set for acute idiopathic middle ear catarrh, six months for subacute, and longer than this is chronic. We notice that leeching is still recommended for acute middle ear catarrh, with great hyperæmia, if after a second or third trial no good results any further attempts are useless, for likely secondary changes in the labyrinth have occurred. Gruber also prefers in middle ear catarrh the use of injections of solutions instead of vapours by the Eustachian tube. In regard to diphtheritic otitis media, the path of the infection may be through the Eustachian tube, caused by inflation with the air-ball; a good typical case is described.

There is a very able and interesting article on mastoiditis, and caries and necrosis associated therewith. The subject of

diseases of the labyrinth terminates this valuable and voluminous work.

One noteworthy feature is that the author does not limit himself and his readers to his own views, but freely quotes the views of other authorities on the subject, both as regards treatment and otherwise, thus greatly enhancing the value of the volume. There are many good illustrations and two very fine lithographic-colored sheets of lesions of the membrana tympani. The translation has been ably done, and reads well, being free from the Teutonic idioms so apt to creep into a translation from the German, done even by the best scholar.

The printing and entire get-up is good, and altogether the work reflects the highest credit on the editors and publisher.

The Physician's Visiting List for 1891. Fortieth year of its publication. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut street.

Blakiston's Visiting List has now reached its fortieth year of publication, a sufficient proof of its meeting the wants of medical practitioners. The publishers in this the latest issue have added some new features which will more than ever commend it to physicians.

The Medical Bulletin Visiting List, or Physician's Call Record for 1891. Philadelphia and London: F. A. Davis.

The Medical Bulletin Visiting List will be found well suited for the needs of the busy practitioner.

Society Proceedings.

MONTREAL VETERINARY ASSOCIATION.

Regular Meeting, December 4th, 1890.

THE PRESIDENT, DR. D. McEACHRAN, IN THE CHAIR.

MR. GEO. MACAULAY showed the fore-leg of a horse where a sloughing condition of the long flexor tendon with extensive phlegmonous inflammation had been caused by a nail entering the frog of the foot.

A communication was read from Dr. L. E. Willyoung, D.V.S., of Rochester, N.Y., upon two outbreaks of poisoning by bitter-sweet berries (*Solanum Dulcamara*—"Woody Night-shade"). The animals affected belonged to two flocks of sheep who were seen to eat freely of the berries in the month of September. About ten per cent. of the whole flock died within twenty-four hours after eating the berries, being fourteen hours after the onset of the symptoms. Many others were taken ill, but recovered. The symptoms were those of violent gastro-enteritis, with delirium and coma in the later stages. Convulsions and paralysis were also observed. A number of post-mortems were made, and large quantities of the berries found in the rumen in each case.

The PRESIDENT mentioned cases of sheep being poisoned by eating certain varieties of mushrooms. In one case, where many animals had died, he had procured some of the plants and fed them to sheep, without producing any ill effects; this he thought was because the mushrooms were allowed to dry before they were experimented with.

DR. WYATT JOHNSTON reported five autopsies he had performed upon horses dying after an illness of a few days with symptoms resembling those of spinal meningitis. In none of the cases was any lesion of the cord discoverable. In two instances, thinking that the condition might be one analogous to rabies, he had made sub-dural inoculation in rabbits, using an emulsion of the medulla oblongata in sterilized bouillon, two minims being injected. The animals remained in perfect health. The disease

seemed to be toxic rather than inflammatory, and was possibly of septic origin. A careful clinical study of such cases would probably show them to be distinct from meningitis, though at present they were confounded with them.

MR. T. C. SIMPSON reported the results of a microscopic examination of the lungs in seven cases of pneumonia in the horse. The work was done in the pathological laboratory of McGill University. The sections were all cut in paraffin and of a uniform thickness of, at least, 15μ , and in most cases of 10μ . The cases differed widely in character. In two (7 and 6) the condition was analogous to that found in acute croupous pneumonia in man. In a case of so-called embolic pneumonia, the lung had presented numerous areas of hæmorrhagic infarction, but no thrombi were found in the veins in right heart. The smaller vessels in the affected areas were filled with granular and white cell thrombi, which in some cases were distinctly laminated; no disease was recognizable in the walls of these vessels. The thrombi nowhere contained any large number of micro-organisms.

In a case of "multiple necrosing pneumonia," with formation of numerous small, ragged, recent cavities, these were surrounded by a zone of desquamative catarrhal consolidation, the exudate being composed entirely of large flat cells, apparently proliferated alveolar epithelium. These were in a condition of coagulative necrosis. Surrounding these areas was a zone of small cell infiltration (demarcation).

In a case of aspiration pneumonia, where death with symptoms of urgent dyspnoea followed within forty-eight hours the clumsy administration of a drench, the lungs were found to present innumerable small areas of hæmorrhage (pulmonary apoplexy). The bronchi were much reddened. The pulmonary vessels were free from obstruction. No extravasations were found in any other parts of the body. Microscopical examination of the hæmorrhagic areas showed that the blood lay chiefly within the alveoli. In many places the alveolar walls presented defects, large spaces occurring where 5, 10, or even 15 alveoli communicated freely with one another. Most of these contained blood,

others were empty. There was marked acute bronchitis and peribronchitis in the smallest tubes. The arteries were free from thrombosis, and their walls showed no degeneration, rendering it probable that the hemorrhage was due to rupture of the capillaries from laceration of the alveolar walls (caused by violent coughing).

In a case of pleurisy of about twelve days standing, the exudate in the visceral pleura was sharply divided into a narrow superficial zone (5 mm.) and a broader deep zone (1 cm.); the deeper zone contained numerous spindle-shaped cells and small vascular loops. The superficial zone was characterized by the presence of great numbers of large flattened cells apparently endothelial in origin. The nuclei in these cells stained deeply, and appeared to be proliferating.

OTTAWA MEDICO-CHIRURGICAL SOCIETY.

Regular Meeting, Nov. 14th, 1890.

DR. HORSEY, PRESIDENT, IN THE CHAIR.

The PRESIDENT presented a man, aged 70, on whom he had operated for cataract four weeks previously, and who could now read very well with lenses of 14 dioptries.

DR. EDWARDS described a case of *Hæmoptysis* occurring in a lad, 8 years of age, and probably induced by over-exertion and excitement. He had had several previous attacks of epistaxis and one of hæmoptysis. The hemorrhage was controlled by ergot, gallic acid, and acetate of lead. He referred to another case occurring in an adult after severe exertion, and one occurring in a woman with valvular disease, during her second confinement. Dr. Edwards spoke of the prevalence of phthisis among the Indians of the North-West, and the frequency with which it was preceded by hæmoptysis. As to the treatment, he had found ergot, turpentine, quinine in 10 to 15 gr. doses, and gallic acid the most useful remedies. Having recently had occasion to use morphia hypodermically in post-partum hemorrhage with most satisfactory results, as advised by Dr. H. P. Wright, he thought it might also prove of service in hæmoptysis,

though he had no experience of it. He did not favor the use of emetics or venesection.

DR. ROBERT BELL confirmed Dr. Edwards' statement regarding the prevalence of phthisis among the Indians of the North-West.

SIR JAMES GRANT considered Ottawa singularly favored as regarded the comparative infrequency of phthisis, which he thought due to the exhalations from the pine lumber.

DR. J. A. GRANT thought the prevalence of phthisis among the Indians might possibly be accounted for by infection through the bacillus tuberculosis.

DR. PREVOST repeated the views he had advanced in a previous paper regarding the cause of hæmoptysis, which were to the effect that every case of hæmoptysis not depending on cardiac disease, or supplementary, was due to the presence of tubercle in the lung. He believed this in spite of a case mentioned, in which the party referred to had had a severe hemorrhage twelve years ago, but had as yet had no return, and was apparently in good health. He thought, even though the disease might remain quiescent for a number of years, it would eventually light up again.

DR. WRIGHT could not quite concur with Dr. Prevost. He thought if, after four or five years, there was no return of the hæmoptysis, and no physical signs were present, he would be justified in pronouncing the patient cured. Dr. Wright had not used morphia hypodermically in hæmoptysis, but had used it with very satisfactory results, in the dose of half a grain, in post-partum hemorrhage. In fact, though at times he had been obliged to repeat the dose, he had never failed to obtain a good effect from its use in this form of hemorrhage in connection with hot douches.

DR. GAEROW had been led to believe opium was our sheet anchor in hæmoptysis; it acted by slowing the heart and lessening the nervous excitability.

DR. EDWARDS again referred to the frequency of hæmoptysis and prevalence of phthisis among the Indians, and stated that everything was being done by the Government to endeavor to

isolate cases and provide suitable means for carrying out their treatment. The Indians, however, were very difficult to deal with.

In summing up, the PRESIDENT admitted that while phthisis was the chief cause of hæmoptysis, he did not think all cases not connected with cardiac disease could be considered as due to the presence of tubercle. He pointed out that the pulmonary systemic circulations were distinct, and that, theoretically, aconite, which lowered the general blood pressure, should act better than ergot.

Selections.

The Historical Development of Therapeutics.—It is well sometimes, even for the most progressive of us, to stand still and review what has been done in the past. The laborious and earnest work of observers of the olden time is apt to be forgotten in the excitement of new things and new ideas. During this century the science and art of medicine have seen as many changes and advances as perhaps any other department of practical knowledge ; since, indeed, medicine has taken what she needed of the rapidly developing sciences of physics, chemistry, and biology. The mode of progress of one branch of medicine—therapeutics, the aim and end of medical science—was the subject of an interesting address given by Professor Oscar Liebreich in 1887. Virchow has affirmed that all the lasting progresses in medicine have been made by anatomical discoveries, and many examples are familiar to all of the truth of this, such as the discovery of the capillaries by Malpighi, and of the cell by Schwann. But such a statement is not the whole truth ; as Liebreich shows in his address, many physiological discoveries have been epoch-marking, especially in their bearing on the art of therapeutics.

Ancient therapeutics were pure empiricism ; and there are not a few who still hold that this is the chief element in the modern art. This may be so, but the development of physiology and of its daughter science pharmacology has led to the hope that empiricism will give way to rational treatment, art to science.

The vicissitudes through which drugs have gone are in many instances not only interesting, but instructive. Pliny, for example, recommended the use of mint, since it healed a diseased spleen when it was eaten from the growing plant nine days in succession. But he also states that it increases the appetite, and, when inhaled, improves the condition of the diseased nasal cavities, and when applied to the forehead relieves headache. It was eighteen centuries later when menthol was brought from China and utilised in the treatment of migraine, for some forms of which it is an efficacious remedy.

The soporific and lethal properties of opium were also known to Pliny; but the drug, from causes imperfectly known, became degraded. It was for a time an ingredient in *Theriacum*, a favorite remedy for all diseases in ancient days. The use of opium seems, however, to have been forgotten until Paracelsus introduced laudanum, and since his time it has been regularly employed in medicine. Its present importance is evident to all. Many other instances (coca, cinchona, etc.) might be cited of the accidental introduction into medicine of drugs, which have become, as investigation of their properties progressed, of great importance in the treatment of disease. What modern science has done, however, is to take these drugs and investigate them so as to render their employment more judicious. This is still one of the aims of pharmacology. Here it is that physiology comes in, and the words of Mitscherlich (1847) on the subject are well worth quoting:

“The changes in the function of an organ are the most important aids to the explanation of the action of a drug. In a large number of good observations there are many certain results obtained, and, on the other hand, many imperfect and false conclusions as to the action of drugs; so that for the correct understanding of the effect of a drug not only must its action be observed on the function of the brain, spinal cord, the senses, muscles, digestion, circulation, respiration, micturition, secretion and excretion, but also on the body as a whole.”

This is naturally a point of view from which the ancients (or, indeed, the exponents of medicine till quite modern times) could

not regard drugs ; they had not the guiding light of physiology. An excellent example, illustrative of this, is found in digitalis. Fuchsius, of Tübingen, appears to be the first medical writer who recommended the drug (1542), but great uncertainty as to its utility prevailed, so that, although it was included in the *London Pharmacopœia* published at the commencement of the eighteenth century, it was omitted from the 1746 edition, and was not reinstated until forty-four years after. This was after Withering had published an article (1775) on the efficacy of digitalis in the treatment of dropsy. Withering appears also to have had a clear idea as to the direct action of the drug on the heart. Our modern knowledge of the action of digitalis dates from Ed. Weber's researches on the influence of the vagus on the heart, and the subsequent researches of L. Traube working with digitalis. We have from these and more recent observations a clearer notion, not only of the exact mode of action of the drug, but of its dosage and its dangers ; and as a corollary we have the introduction of strophanthus and other cardiac remedies, the use of which in practical medicine is the outcome of pharmacological research.

Physiology has, therefore, been of service to therapeutics, but chemistry has advanced practical medicine to a great, if not greater, extent. Paracelsus may be looked upon as the "reformer" who first brought chemistry into touch with therapeutics. Chemistry was then alchemy, and was crystallising, although very slowly, from the impure mother-liquid. Paracelsus looked to alchemy to discover what of virtæ and power there resided in remedies ("was Tugent und Krafft in der Arzney sey"). Modern chemistry has done this, and in two chief ways. The methods of chemical analysis have been the means of separating and purifying the active ingredients of a drug, and these purified products may be applied as efficiently as, and with greater precision than, the uncertain solutions, extracts, etc., of the crude drug. Not only have the rapidly improved methods of chemical analysis greatly influenced the art of therapeutics, but a stimulus has been given to the study of the subject by the advances made in theoretical chemistry. A little consideration will demonstrate

this. One of the greatest advances of modern chemistry was the discovery of the laws regulating the combination of elements, of radicals, and the construction of the constitutional formulæ of the organic compounds. These discoveries were the result of the work of many observers, from the epoch-making researches of Lavoisier to those of Williamson and Gerhardt in our own generation. It may not at first be quite apparent what connection these results have with therapeutics, what relation the mode of combination of the elements and radicals in an organic compound has with the treatment of disease. But this relation is quite apparent when we consider that by changing the radicals of a compound—that is, by substituting other radicals for those already present—we alter the physiological and therapeutical effect of a substance. The well-known results of the researches of Cruik Brown and Fraser may be quoted—one example among many—namely, that the tetanising action of strychnine is changed to a paralysing one, if a methyl-group be added to the molecule of strychnine. This fact, that of the modification of the physiological action by the alteration of the chemical constitution of a substance, constitutes a modern and exceedingly important advance in the science of the treatment of disease. In pharmacology the study of the action of chemical substances (drugs) on the life processes of the cell must play a large part. “The cell,” as Virchow clearly says, “is the primary form-element of all living manifestations, whether in health or disease; it is that from which all living activity proceeds.” The pharmacology of the cell is, however, still a study in embryo; but the researches of Ehrlich and others promise fruitful results.

A review of the history of the development of therapeutics would not be complete without some reference to the results obtained from the study of antiseptic remedies. The application of these to the treatment of wounds need only be mentioned; but there is another one of these which is as of great importance in therapeutics, namely, the administration of remedies as internal antiseptics. The conditions are not quite the same as when they are applied externally, for when administered as medicines they enter the stomach, where they may be altered in their con-

stitution, and, after entering the circulation, they may form combinations which render them inefficient as antiseptics, or they may be rapidly broken up by the living tissues, and thus rendered impotent. A simple example may be taken of this difference of action of drugs outside and inside the body. Trichinæ outside the body may be readily killed by a solution of picric acid, and yet in cases of trichiniasis the tissues may be made quite yellow with the drug without the disease being affected. Mercuric chloride, the most powerful germicide we possess, is quite powerless against pathogenous organisms such as the anthrax bacilli when growing in the body. This may be partly on account of the small quantity of the drug that it is possible to administer, but it is also partly due, in all probability, to the combination of the drug with the constituents of the body—for example, the proteids. On the other hand, substances which outside the body have only a subordinate influence on micro-organisms are of service in certain acute infectious diseases—quinine and iodoform for example. We look in the future for pharmacology to tell us what these apparent anomalies really mean. The study must be built on a foundation of the physiological action of remedies, and must go hand in hand with a knowledge of pathological changes, structural, chemical, and functional.—*Editorial in British Medical Journal*, Nov. 15.

Acute Pleurisy and Acute Rheumatism.

—In 1883 Aufrecht drew attention to the decided results he had obtained in the treatment of acute pleurisy with the salicylates. Recent writers, notably Tetz (in *Therapeutische Monatshefte*, No. 7, 1890), have confirmed his observations. We must allow that the title of a remedy to cure acute pleurisy must be very well substantiated. Acute pleurisies have a way of stopping short without treatment, of beginning with a fierce pain which suddenly abates, and of suddenly going on into the stage of extensive effusion with very little warning pain at all. Nevertheless, the successful results of the administration of salicylates in acute pleurisy, as recorded by these writers, are sufficient to raise in our minds the question as to whether acute rheumatism

and acute pleurisy are not the same disease. Long ago Mr. Hilton, in his admirable lectures on Rest and Pain, pointed out the resemblance between the pleura and pericardium and the joints. The pleural cavity represents a huge joint constantly in motion. It has the two surfaces covered by serous membrane and gliding smoothly upon each other by the aid of a lubricating fluid. And Mr. Hilton went on to apply his law of associated muscular action, nerve supply, and function in the pleura, showing how, when inflammation took place, the nerves of the pleura that were directly in communication with those supplying the intercostal muscles called for cessation of movement, and how the pain felt in the skin over the inflamed area was the agent by which this needed rest was obtained. Practically the same thing occurs in the joint that is inflamed and painful from acute rheumatism. Probably the resemblance between inflammation of a serous membrane and that of a joint would be more striking were the conditions exactly similar. But in the case of the serous membrane complete rest of the opposed surfaces cannot be obtained. The lungs cannot cease taking in air, and the heart cannot stop beating. Probably this accounts for the more fibrinous and adhesive character of the effusion, a further effort of Nature to secure rest. In the case of the joint, immediate rest is secured and the effusion is not adhesive in ordinary cases. The clinical features of acute rheumatism point to a common origin with pleurisy, if not to a practical identity. Many cases of acute articular rheumatism are complicated with effusion into the serous membranes. We say *complicated*, but we mean really that the pleural joint or the pericardial joint has been attacked as well as the wrist joint or the elbow joint. And pleural effusions are of much more frequent occurrence in the course of rheumatism than is commonly supposed. In the ordinary run of cases of acute rheumatism the joints are so very painful that an examination of the bases of the lungs is not quite practicable, and, moreover, there are many practitioners who do not injure themselves with over-zeal in the clinical examination of patients, particularly after a good working diagnosis has once been made out. We are satisfied that, if pleural effusions in rheumatism were

more frequently looked for, they would be oftener found, and those who found them would be more disposed to regard rheumatism as a general attack on all the joints, including the serous membranes. The general tendency to look with suspicion upon "exposed to cold" as a cause for so many diseases, to regard chilliness as an effect consequent upon the poisoning of the system by some external agent, rather than as a cause of disease, makes us skeptical as to whether such a thing as *pleuritis a frigore* exists. It is not more rational to regard it as being due to some inherent tendency in the individual to inflammations of an arthritic form, and to infer that, when pleurisy occurs alone, it simply means that only one joint is affected, or perhaps that the main attack has been upon one joint, the others escaping lightly? The frequent occurrence of pleurisy without effusion into other joint cavities might arise from the fact that into the pleura a quantity of fluid may be effused rapidly, while when the joints are the main point of attack but little can make its way into them. To borrow an old expression, the *materies morbi* readily leaves the blood to fill up the pleural cavity, but, attempting to pour itself into a joint, it meets with resistance and seeks an outlet elsewhere. The effects of the salicylates, so well marked in rheumatism, ought to be equally good in this disease, and we trust that many observations will be made on this interesting subject.—*N. Y. Medical Journal.*

Valuable Authority on Sewage Disposal.—At a recent scientific society meeting in London, E., Dr. C. R. Drysdale, F.R.C.S., &c., read a paper on the sewage of London, Paris and Berlin. (*Sanitary Record.*) In his discourse he demonstrated that the only rational and satisfactory method of treating the sewage of large cities was that now employed at Berlin, Paris, Croydon, and at a few other places on a less extensive scale; and its agricultural application on suitable soils. In his opinion London presented a very bad example to other cities in the manner in which it dealt with the sewage of the metropolis by turning at least 150,000,000 gallons daily into the Thames, at the outfalls of Barking and Crossness, and by

unwisely and inadequately dealing with the solid matters. Glasgow and Dublin were even more lamentable in this respect than the metropolis. At the present time Paris had 1,500 acres of land cultivated by small proprietors, who made use of about 20,000,000 tons per annum to irrigate their farms. Some 3,000 acres had also been acquired at Acheres, which it was proposed to cultivate in the same manner; and still another sewage farm was contemplated. The effluents were perfectly pure, and were even drinkable. At Berlin the area of the sewage farms amounted to 19,000 acres. To these the sewage was pumped from twelve pumping stations, through pipes forty inches in diameter, and most of the farms had been under cultivation during the past fifteen years. About two thousand were constantly employed, and not a single case of typhoid occurred during the whole of last year. The general salubrity was vouched for by the fact of two convalescent hospitals having been established on the farms themselves. The crops grown were grass, cereals, roots, potatoes, cabbages, and fruit. Money to the amount of £3,211,000 had been borrowed for successfully dealing with the sewage of 1,500,000 inhabitants, while Sir R. Rawlinson estimated that the present sewage experiments in London with over 5,000,000 inhabitants would cost £10,000,000 sterling for no purpose whatever. The Paris Commission recently sent to Berlin had reported a perfect success, and if the London County Council would send a Commission, their report must be equally satisfactory.

Berlin (from condensed report in *Sanitary News*) is divided into twelve districts, which have each of them its own pumping station, which sends out the sewage of its part of the one and a half million of inhabitants composing the population of Berlin to the different farms purchased by the municipality. These pumping stations sent in the year 1888-89, 44,919,000 cubic metres of water to the farms to be purified there. This means daily, and per head of the population, 103 litres; and as only 64 litres per head are furnished by the water companies daily, 38 litres per head are added from the rain-fall in the city and the various wells of salt and fresh water therein. The total extent of the

farms used for the purification of the sewage is 7,614 hectares, which, at the rate of $2\frac{1}{2}$ acres to the hectare, gives nearly 19,000 acres devoted to this purpose in Berlin. London has not a single acre utilized for the purification of its sewage. The farms are situated partly on the north and partly on the south of Berlin. The southern ones—Osdorf, Heinersdorf, and others—are most beautiful and successful farms, and about 71 per cent. of the ground of these farms is irrigated by the sewage; 96 per cent. of this irrigated part is drained. The length of the pipes which convey the sewage to the farms varies from 964 metres (about five-eighths of a mile) to 18,626 metres, or about $11\frac{1}{2}$ miles, and the diameter of the main tubes varies from one metre to three-quarters of a metre. Once arrived at the farms the diameter of the pipes is lessened, and finally those used to convey the sewage to the fields do not exceed one-fifth of a metre. The conduits end at the highest point of the ground to be irrigated, and the most inclined fields are employed as meadows, whilst the flatter fields are used for the cultivation of roots; and some fields are covered in winter time by sewage for some months, and then used for the production of cereals in spring. The water is conveyed from the highest point of the field by ditches, half a metre in depth, and where root crops are concerned the sewage is allowed only to touch the roots of the plants; but in the case of meadows it flows over the whole surface of the meadow. The idea that such farms become unfit for use in some years by clogging up, and then unable to purify sewage any longer, is known to be erroneous, and after many years of use the sewage water is still only a slightly muddy fluid, and the effluent is pure, clear, and inodorous.

With respect to the expense of the farm, the older portion cost about £8,000, which at $3\frac{1}{2}$ per cent. would require £28,000 as interest on capital. In 1889 these farms yielded less than this to the extent of £16,000, which was all that the city of Berlin had to pay in aid of them, whereas London has to pay an endless amount for the construction of useless tanks at Barking, sludge vessels, etc., and all without raising a blade of grass or a single root by the aid of her sewage.

In Frankfort the cost per head for classifying the sewage was found to be 1.22 mark ; in Wiesbaden, 0.68 mark, and in Berlin only 0.48 mark, or about 5½d. per head of the population per annum. But the machinery used for the purification of sewage where there is no sewage farm goes on continually diminishing in value ; whereas the sewage farms become always more and more valuable as property. So that both with respect to the condition of the effluent and the expense, the Berlin system is vastly superior to the London system. With respect to the effluent, the thirteen years' experience of some of the Berlin farms shows how pure it is, and that it will always remain as pure is now ascertained. The effluent has almost no suspended solids in it, all being removed by filtration through the ground. Sometimes the effluent from the basins contains iron, and in such a case the water may be opaque and like lime-water. There were very few microbes in the effluent. In 100,000 parts of Berlin sewage arriving at Osdorf, there are about 16 parts of ammonia, and in the effluent only a trace of this product. The amount of chloride is not changed by irrigation ; 100,000 parts of sewage require 28 parts of permanganate of potash to oxidize it, and the same quantity of effluent required only two parts of the salt to do so. Of course all sewage contains far more salt than can be utilized by the plants ; but this does not affect the excellent quality of the effluent. Grass lands purify rather better than root crops. Only 1-26th of the phosphoric acid contained in the sewage appears in the effluent.

The city of Berlin has taken advantage of the existence of the farms to employ a number of persons in agriculture. Some of the workmen receive in wages and kind of value of about £60 yearly. The day laborers receive about £20, and women about £10, with lodging and farm produce, which makes the yearly income of each family about £60. There are also about 900 paupers who are employed on the farms according to their powers. The produce of their labor is estimated as about worth one-fourth of that of the ordinary laborers. The health of the population employed on the farms has been examined by Professor Virchow and found to be excellent. Thus, in 1889,

there was not a single case of typhoid fever among them, although that disease prevailed in Berlin for a time in that year. The population consisted of 1,960 persons. There were only thirteen deaths in the year, and of these only three were grown up persons, the rest were children. There was very little contagious disease among the employes ; a few cases of measles, diphtheria and croup were mentioned. There was no evidence of any disease caused by the irrigations. Altogether, the experiment made in Berlin, and which might equally be made in London, is a splendid success. It is true that the situation of Berlin, in the midst of a plain, is favorable ; but, as Dr. Carpenter of Croydon has often taught, all soils can be used for irrigation if only too much is not put upon a soil that is unsuited for heavy doses of sewage. Eventually, said Dr. Drysdale, I feel sure that all cities will imitate Berlin. Only it is humiliating to think that London should lie so much in the rear of scientific practice, and require so much wakening up to make it attend to its own best interests in this matter.—*Canada Health Journal*.

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NOTES ON KOCH'S TREATMENT.

German, French and English journals are full of the results of the injection of Koch's lymph in cases of tuberculosis. The most recent experiences point to the urgent necessity for caution in the employment of the fluid in cases of general tuberculosis, several fatal cases having occurred as the direct result of the injection.

One of the most interesting communications made public up to the present, is the report to the Société Médicale des Hôpitaux by three of its members, who spent some time in Berlin studying the subject.

Le Bulletin Medical for Dec. 7th contains these reports, a synopsis of which we here append :

Mr. Thibierge reported on the influences of the lymph in cases of lupus. He especially refers to the ulterior effects of the injection on the lupus patches. After a certain number of injections the local effects gradually decrease in spite of a continuation and increase in the dose injected. The redness, secretion and tumefaction gradually diminish, until finally all traces of new tissue disappear, its place being taken by a smooth scar.

As only a period of two months has passed since the first case of lupus was treated in this way, it is too early to decide as to the permanency of the cure. A temporary cure it no doubt is. In most cases from twelve to twenty injections are sufficient to bring about the disappearance of the lupus tissue.

M. Cuffer reported on the results obtained in tuberculosis of the lungs. He noticed in a number of cases a primary fall of the temperature (95° Fah.) before the stage of reaction set in.

During this stage the pulse is soft and compressible and the heart beats weak.

When reaction sets in, we have two classes of symptoms. (1) Those arising from the peritubercular congestion in the lungs. (2) Those arising from the general disturbance.

The former or local reaction is characterized by a dyspnoea more or less pronounced, due to the congestion; on auscultation fine râles are heard. Several cases have now been recorded where, in addition to the local congestion, there has been evidence of quiescent tubercular infiltrations undergoing rapid destructive changes. One case is reported of a tuberculous infiltration of the right apex, where, after the fourth injection, unmistakable signs of acute miliary tuberculosis were seen. M. Cuffer concludes that there are two forms of local reactions, one characterized by simple congestion, and another resulting in intensification of the tubercular process.

It is doubtful whether the alleged diagnostic value of Koch's lymph will come up to early expectations, a number of cases having been reported of tuberculosis where neither a local or general reaction has followed repeated doses. It is maintained by some that reactions have followed the use of minimum doses in other diseases. A little more experience will clear up this point. As to the time of the reaction setting in, cases vary generally. It has been noticed as early as three hours, and in a few cases as late as fifteen hours.

URATOSIS.

The term *Uratosis* has been suggested by Sir Wm. Roberts to designate that disordered state of nutrition characterized by the deposition of the crystalline urates in the tissues or fluids of the body. By adopting this nomenclature, several advantages, it is claimed, would follow. First, a distinction would be clearly drawn between the effects of an excess of uric acid in the blood and uric acid precipitated as crystalline urate. What, if any, pathological significance the former condition has was at present unknown. The serious consequences following the latter state were well recognized. Excess of uric acid in the blood was only an exaggeration of a normal state, while deposition of crystalline urates was, in any quan-

tity, a pathological condition. Another advantage claimed is that we would be better able to estimate the relation between the different causes that give rise to uratic deposits. When speaking of "ordinary" gout and "saturnine" gout, we use terms which, in the opinion of Sir Wm. Roberts, would be more truly expressed by "gouty uratosis" and "saturnine uratosis." It being much more likely that the gouty diathesis and lead poisoning, while differing in other respects, had one tendency or vice in common, viz., the tendency to the deposition of the crystalline urates or uratosis.

The separation of the effects of the deposition of the crystalline urates from simple increase of uric acid in the blood was of importance from a therapeutic point of view. In the former, the danger of precipitation, especially in the kidneys, was of a very grave character and called for immediate treatment. By the employment of alkaline remedies, we are enabled to postpone for a long period this deposition, and thereby gain time which should be employed in combating the essential cause.

—In these days when cure by injections or inoculations is attracting such widespread attention, it may be of interest to note that so far back as 1863 Dr. James Grant of Ottawa (now Sir James Grant) applied ordinary vaccination for the cure of skin disease, and with evidence of success. His paper on the subject may be found in the *Medical Times and Gazette* for the year above mentioned. In some of the cases various remedies had been administered as alterative with apparently little benefit, but after vaccination the disease disappeared in a comparatively short time. In other cases no remedy other than the vaccination was tried and healing followed. From all the conclusion is drawn that the vaccination acted as an alterative on the nutrition. Apparently this is just what Koch's lymph does, though it would seem that it is peculiar in selecting the tissues that are the site of the specific disease.

—J. B. Lawford, F.R.C.S., of Montreal, who graduated at McGill in 1879, and who was Holmes Medallist of his year, has been appointed assistant surgeon to the Royal Ophthalmic Hospital, Moorfields.

KOCH'S TREATMENT OF TUBERCULOSIS IN MONTREAL.

The authorities of McGill University having been favored with a supply of Koch's lymph, experiments were at once instituted in the wards of the Montreal General Hospital by Drs. Roddick, Shepherd, Bell and MacDonnell. For the following report of these experiments we are indebted to Dr. Robt. E. McKechnie, House Surgeon:—

CASE I.—Mrs. P., an old woman, has had facial lupus for eight or ten years. The diseased area has been scraped and cauterized at different times, temporarily arresting but not curing the disease. At present, the diseased area is as large as the palm of the hand, covering the left temporal, malar and upper part of buccal regions, also involving the outer canthus of the eye, with the outer half of the lids.

Dec 19th.—At 10.45 A.M. $\frac{1}{10}$ ccm. of a 1 per cent. solution of Koch's lymph was injected below her right scapula. She was then put to bed; hourly temperatures to be taken. At 3 P.M. a blush appeared on bridge of nose and on left cheek. This began to fade at 5 P.M., but did not entirely disappear, as a faint blush persisted over the left lower jaw. Patient experienced no chill and no elevation of temperature.

D. c. 20th.—At 10.30 A.M. $\frac{3}{10}$ ccm. of the same solution was injected. Temperature began a definite rise at 4 P.M., reaching the maximum of $102\frac{1}{2}^{\circ}$ at midnight. There was no chill, nor was nausea or headache experienced. Patient wore a dull heavy expression all day. At 3 P.M. a blush appeared below the diseased area, over lower jaw; while at 4 P.M., coincidentally with the beginning of increased temperature, the affected tissues became decidedly redder in color, but showed no tendency to necrotic change. This redness died away during the night. At 11 P.M. the patient was feeling heavy, but not sick; and her pulse very irregular in volume.

Dec. 21st.—At 10.40 A.M. $\frac{1}{10}$ ccm. of same dilution of the lymph was injected. The same local changes followed this injection, but were not as intense, and the highest temperature reached was $100\frac{1}{2}^{\circ}$ at 8 P.M.

Dec. 22nd.—At 10.50 A.M. $\frac{1}{10}$ ccm. of the same dilution was injected. Temperature began to rise at 4 P.M., reaching $102\frac{1}{2}^{\circ}$ at midnight, steadily declining after that. Patient was very dull all day and inclined to sleep; also felt sick at her stomach. Locally the changes were as before, but it is now noticed that there is a tendency to elevation of the diseased patch by formation of crusts of dried secretion. This is especially noticed about the outer half of the affected eyelids, where the crusts are about $\frac{1}{4}$ -inch in thickness.

Dec. 23rd.—Patient was not injected to-day as temperature was still above normal. She was drowsy all day, with no appetite; but as

evening came on with normal temperature, she felt better. A decided increase in the secretion, from the diseased tissues at outer part of the left eyelids, has been remarked all day.

Injections are to be continued in this case, in gradually increasing doses, till definite results are obtained.

CASE II.—M., a man aged 30, with a tuberculous testicle and the same disease of the bladder.

Dec. 20th.—At 10.45 A.M. $\frac{3}{10}$ ccm. of the 1-100 dilution of lymph was injected. No definite reaction followed this.

Dec. 21st.—At 10.49 A.M. $\frac{1}{10}$ ccm. of the same solution was injected. At 2.15 P.M. he had a slight chill, and felt cold for over an hour. Temperature was rising at this time, reaching its maximum of $102\frac{1}{2}^{\circ}$ at 7 P.M. Almost coincidentally with the increase of temperature was an increase of pus in the urine, and the appearance of small quantities of blood. Patient felt heavy, with no appetite; tongue furred heavily. No alteration had yet appeared in the affected testicle.

Dec. 22nd.—No injection was given to-day, as the temperature in the morning was still 100° , and patient felt very dull and sick. He complained during the night of his head feeling very big. Temperature ran along evenly till 6 P.M., when it began to decline. At 5 P.M. the affected testicle began to pain, and on examination was found tender to the touch, and swelled about one-third larger than the day before.

Dec. 23rd.—The reaction of Dec. 21st ended at 4 this A.M., when the normal temperature was reached. The injection was not repeated to-day. The affected testicle is still tender, and pain runs up both groins from it, but most marked on the affected side.

CASE III.—J. L., a girl of 15; has a tuberculous disease of the skin. The diseased patches are found on the face, both arms and hands, and on the right instep. The largest areas are below each eye, where irregularly outlined patches about 2 inches by 1 inch are seen.

Dec. 19th.—At 11 A.M. $\frac{1}{10}$ ccm. of a 1 per cent. dilution of the lymph was injected. At 2.50 P.M. a blush appeared on both cheeks, especially marked on the right. This began to fade at 5 P.M., but never entirely disappeared from the right cheek. No constitutional symptoms appeared to-day; temperature remained normal.

Dec. 20th.—At 10.35 A.M. $\frac{2}{10}$ of same dilution was injected. A definite rise of temperature began at 4 P.M., reaching its maximum of $101\frac{3}{4}^{\circ}$ at 11 P.M. No chill was felt at any time, but patient had a severe headache all day, felt very dull, had no appetite, and tongue was heavily furred. At 3 P.M. a deepening in color of the diseased patches on the face was first noticed. This continued till 5 P.M., when the deep color was very marked. The blush noted the day before on both cheeks also appeared and deepened. A few moist spots of exudation ap-

peared on the diseased parts about 4 P.M., but none were remarked later than 8 P.M.

Dec. 21st.—At 10.45 A.M. patient was injected with $\frac{1}{10}$ ccm. of same dilution of lymph. The temperature had just regained the normal from yesterday's rise, and patient was experiencing headache and nausea. The blush on the right cheek was nearly as deep as the previous day. Following this injection no definite change was noted. The temperature was above normal all day, the highest point reached being 101° at 5 P.M. Patient felt miserable all day with headache and nausea. The diseased areas remained deeply injected, but showed no necrotic change.

Dec. 22nd.—At 11 A.M. $\frac{1}{10}$ ccm. of the same solution was injected. The beginning of the rise in temperature was delayed, not occurring till 6 P.M.; and the highest point reached was only $100\frac{3}{4}^{\circ}$ at 12 P.M. But at 7 P.M. both cheeks were markedly erythematous, and the surfaces of the diseased patches on the face a dark red. At this time the patient had much nausea.

Dec. 23rd.—No injection was repeated to-day, as the temperature was still 100 in the morning. Patient was feeling heavy and dull,—out of sorts generally. The tongue was still moderately coated. The diseased areas on the face showed distinct changes. There was some elevation of their surface, with much increase in the heaping up of scabs. In a few places deeply-seated yellowish-white spots the size of a hemp seed were seen, indicating necrotic changes. One of the patches, on the back of the left hand, discharged a small quantity of sero-pus and began to scab.

In addition to the foregoing, the following cases have also been put under treatment, but are not yet ready to be reported :

A case of chronic cystitis was injected for diagnostic purposes.

A case of moderate tuberculous involvement of the lungs with anaj fistula.

A case of tuberculous testicle in a child, with disease of the bone in addition.

In none of these six cases has Koch's dose for lupus of .01 ccm. of the original lymph been reached, the nearest approach to it being $\frac{6}{10}$ ths of that quantity. The dose started with is that recommended for phthisis.

The treatment has only been begun in these cases, and the foregoing notes merely show some of the earliest symptoms. Results, definite in character, will be looked for later on.

THE ROYAL SOCIETY OF CANADA.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

GENTLEMEN,—It is the custom in England to publish in some of the journals the claims, especially on the score of original work, of all candidates for election to the Royal Society; the latter being regarded as about the highest honor that can be conferred on a scientific man. So far as I know, this has never been the case as regards the Royal Society of Canada, though the fellows have been made aware of the status of candidates. With a view of initiating so good a custom as that prevailing in England, I furnished you with a list of my own papers last spring *after* my election to the Royal Society of Canada, so that any one might judge for himself of the merits of the case. The list was not published till a few weeks ago, and then without one word of explanation. After trying to make matters clear again, I found that the only notice in explanation of the appearance of the list is a meagre paragraph at the close of the last page of the December number of the JOURNAL, and which seems to imply that I might be a candidate, but certainly had not become a fellow; with, moreover, no very complimentary reference to the Royal Society. Since the Society is made up largely of the leading scientific men of the country, and has published a good many quarto volumes of proceedings, it would appear that it has at least some claim to respect. How many volumes of proceedings has the Canada Medical Association published? My election to the Royal Society was unsought by me, nor did I solicit a single vote; therefore, I the more appreciate the honor so distinguished a body has done me.

I have long been aware that editorial ways were peculiar; but that condition of the nerve centres which has led to such dislocations, isolations and mystifications, without any corresponding gain in differentiation or evolution, is something which it is past my knowledge of physiology to explain. However, I hope it does not betoken any serious impending loss of cerebral equipoise on either your part or mine, and I trust, gentlemen, that you will appreciate my efforts to reach a scientific solution even under such unfavorable circumstances.

Truly yours,

WESLEY MILLS.

Physiological Laboratory,
McGill University.