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CANADA

MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Lectures on the Pathology and Treatment of Joint Diseases delivered at the McGill University, Montreal. By LOUIS BAUER, M.D., M.R.C.S., Eng. &c.

GENTLEMEN,—In compliance with your gratifying invitation, I propose to discuss some important points pertaining to articular diseases. This is possibly the only subject with which I may hope to engage so distinguished an audience.

The last ten years have been fruitful of material advancement both in the pathology and in the treatment of this class of affections, and their cultivation is still vigorously and diligently pursued. Notwithstanding all the achievements in that direction, the subject still remains in a state of transition, through the tenacity with which one portion of the profession adheres to the venerable teachings of the past, and the enthusiasm with which another portion declares itself in behalf of modern ideas. The time has certainly come when an understanding should be effected by means of unbiassed critical analysis and clinical experience. With this object I enter upon the present discourse. If, through inability, I should fail of realizing my design, I may at least hope to place the subject matter in such attractive relief as to insure your permanent interest and active participation in the settlement of the pending questions.

I.

CAUSATION OF JOINT DISEASE.—On this point, there is a decided clashing of views. By far the larger number of practitioners, the leading members of the profession among them, are of the opinion that most cases of this class are the result of constitutional disorder, of which the articular affection is but the localized symptom. To this theory the most prominent authors on surgery are committed, and it is promulgated from the professorial rostrum and at the bed-side. Time and usage have even rendered it popular with the laity. A few modern enquirers, compara-

tively insignificant in name and position, not only take exception to this theory of causation, but assert that articular maladies are excited exclusively by local causes, and that the constitution bears no part in the causation. They further maintain that where the constitution suffers, it suffers from the ulterior effects of the local disease.

As long as etiological views on this subject so widely diverge, there can be no uniformity of treatment; nor can a compromise be effected between views so diametrically opposite. The only way of deciding between two, of which only one can be right, is to analyse the grounds upon which they are respectively placed. I hope the venture on my part in doing so will not be deemed presumptuous, for the conflict of etiology exists, and its settlement is certainly desirable. Too much has been already conceded by the old school to warrant a proud denial; and no party can feel aggrieved when appeal is made to the decision of "stubborn facts."

Scrofulosis, rheumatism, gout, syphilis, scarlatina, pyemia, and other diseases have been enumerated as constitutional causes of joint affections. To strumous disease, however, has been assigned the first rank, inasmuch as it has been linked with the numerous and diversified cases that happen during childhood. From my own experience I have to infer that not less than ninety per cent of all articular affections occur before puberty. Inasmuch as scrofulosis is not limited to childhood, and is supposed to extend beyond puberty, a few more per cent may be added to the original proportion, making a percentage of about ninety-five. Thus the theory of constitutional causation narrows itself down to the theory of strumous causation, and with this we shall have essentially to deal.

In entering upon our investigation, gentlemen, we meet with the singular fact, that notwithstanding the general acceptance of, and acquiescence in, the stated theory, nobody seems to know accurately what strumous disease really is. There are certainly no two writers that fully agree in its definition, nor does scrofulosis rest upon any firm pathological base. Even its clinical character is rendered so indefinite that implicit faith and a goodly stretch of imagination are required to realize its attributes. This is the status of modern literature on the subject, and in extending our researches over a more remote literary period, we are not less surprised to find that the scrofulosis of the present is a materially different malady from that of the past. The pathological school of the humoralists has identified this disease with a distinct morbid principle, a *materia peccans*, contaminating nutrition throughout, and stamping all other incidental lesions with its peculiar unalterable

character. The followers of that school very consistently resorted to starvation, vegetarianism, and to mercurial and antimonial preparations, for the purpose of freeing the system of that *deus ex machina*. With the physiological school the agent of strumous disease was mollified to a more imperfect formation of proteine compounds. They very wisely adopted opposite treatment with a view to regulate the chemical transactions of the body, and to correct the catalytic combinations of the proteine. Both schools accepted perverted hygiene and diet as the remote causes of strumous disease, and consistently believed that it was a disease of pauperism. Again: both schools insisted upon strumous diathesis and an hereditary transmission. These last views are fully compatible with the humoralist principle of pathology, but indefensible from the stand-point of the physiological school. Certain appearances of patients may indicate perverted nutrition, and a morbid principle, thereby engendered, may, like syphilis, be transmitted to generations. But a diathesis for the formation of low-graded proteine combinations is a senseless construction, and the hereditary transmission of such compounds is equally without meaning and inconsistent with the chemical tenacity and restitutive powers of individual life.

Science in its advancement has already made some substantial inroads upon the strumous domain, and narrowed its borders at some vulnerable points. Porrigo capitis and sycosis menti, formerly claimed as specific strumous forms, have of late been proven to be caused by insignificant vegetable parasites. The very prototype of scrofulosis, viz., keratitis scrofulosa, has been reclaimed by modern ophthalmologists as an independent and exclusive local lesion readily yielding to local appliances. And new incursions are threatened from other sides. Help was evidently needed to uphold the loose cohesion of the scrofulous architecture and to save it from pathological downfall. It was but too readily found in tuberculosis. By incorporating the latter with strumous disease, some anatomical tangibility was secured. Gradually the new pathological element has prevailed so completely, that but the name of the old scrofulous doctrine remains. In talking about strumous infiltration, *tubercular infiltration* is meant; and in fact in its former and present application, the tubercular element has completely superseded the strumous one. The transition from one to the other has been effected so clandestinely as to be noticed but by very few. The alliance between scrofulosis and tuberculosis proves, if anything, that neither had ever acquired a self-sustaining existence. Both diseases are clinically and anatomically different in character. One is said to prevail amongst children, the other amongst adults; and only exceptionally is this rule reversed. The organ

which one chooses is but rarely sought by the other. Their very presumed causes differ most essentially,—one said to be the result of poverty and sanitary defects; the other having no respect for gradations of wealth and station. They differ even in geographical distribution. Notwithstanding all these differences, they are, by tacit understanding and acquiescence identified as the same disease. It would be unjust, however to say that this transition has been effected totally without opposition. Of late the pathological character of tuberculosis has been subjected to various and close investigations. Its identity with pus has been asserted by Cruveilhier. The results of his experiments upon rabbits demonstrate at least this much, that pus is susceptible of undergoing the very same metamorphosis as tubercle, from the semi-fluid condition to perfect innocuous calcification. The strongest advocates of genuine tuberculosis have been forced to admit that there are often pus corpuscles, where the external appearance of the object denotes tubercular substance. Few authors have had better opportunities of studying the pathological anatomy of bone and joint diseases than Gurlt of Berlin, his investigations extending even over the veterinary field. If I correctly interpret his statement, he has met with no tubercle in joints and bones at all. What other authors had pronounced to be tubercular infiltrations and caverns, he recognised as purulent infiltration the result of osteo-myelitis, and as bone abscess the sequence of circumscribed ostitis. And Virchow, one of the most esteemed pathologists of our time, considers himself justified in stating that tubercle is fully compatible with the acknowledged changes of inflammatory products. Again, gentlemen, is there any peculiarity about tuberculosis that could be established and accepted?

You are aware that the so-called tubercular cell has been asserted, but the microscope has failed to prove its reality. If the microscope cannot substantiate any peculiarity, how much less can the naked eye! For there is certainly no difference in appearance between tubercular matter and cheesy pus, and the suspicion of identity must necessarily accrue from such conformity. At any rate our knowlege on the subject is not final and exhaustive; and we may justly look for further disclosures rather detrimental to, than confirmatory of, the genuine character of tuberculosis.

But, to return to the starting point of our discourse, I shall find ample occasion to show, that the strumous theory in its practical application to articular diseases, is worthless and rather injurious than otherwise, as it certainly has long diverted us from a course of investigation that alone could lead to practical results.

Consistently with the received opinions the lower classes of society

must come in for their full share of joint affections simply because they are supposed to contend with poverty and hygienic neglect. If this assertion had any show of correctness, it would imply that where we find joint diseases, there we ought to expect poverty and hygienic neglect. But clinical experience in a great measure contradicts the assertion. These affections happen in all classes of society. They do not pass the mansions of the rich, nor are the agricultural districts exempt from their visitation. Yet with all it must be allowed that there is, in the abject domestic condition of the industrial classes of Europe, a plausible reason for assuming that they are more subject to chronic derangements of nutrition than the wealthy portion of society. Nor can the action of such nutritive derangements upon local diseases be altogether denied. At any rate, our pathological associations tend to confirm this supposition; though it may be clinically difficult to qualify the exact measure of those constitutional colourings of local lesions. Those who have had the opportunity of personally investigating the actual social status of the European proletariate and pauperism agree that it is deplorable in the extreme. They occupy in cities the worst of dwellings, in the lowest of quarters; their rooms are overcrowded; their articles of food are of inferior quality; multitudes subsist from offal; their opportunities for cleanliness are limited and little resorted to; their very existence is a contest for the necessaries of life. Many of the working classes and paupers domiciliate in places inaccessible to air and sunlight, in damp, and musty basements where but fungi thrive.* The combined effects of these unfavorable surroundings upon mind and body are so appalling to the humanitarian as to be remembered with painful sympathy. They give rise to the most aggravated forms of so called strumous disease with which the public hospitals and dispensaries are crowded. It is but natural to associate so conspicuous a morbific agency with a class of diseases seemingly devoid of other causes, and reacting heavily upon the nutritive standard of the patient.

In contemplating the financial condition of the same classes in the United States, we have no difficulty in finding an entirely reversed status. Here the demand for labour far exceeds the supply, and its compensation has therefore for years past been very remunerative, so as to furnish ample income to every individual who aspires to an honest living by handiwork. The "Trades Associations" have, under these circumstances, readily succeeded in controlling employers and in imposing upon them

* According to the latest statistics, 10 per cent. of the entire population of Berlin, live in cellars and basements.

thir own terms for labour. However premature the eight hour labour movement may have been, this much is to be inferred from it, that the working classes are almost the sole arbiters of their own affairs, much to the oppression of the other factor of industry. So great has been the demand for hands, as to necessitate the employment of thousands of women and children. Nothing serves as better evidence of the financial thrift of labour than the acknowledged prosperous condition of the Savings Banks. Hence the domestic state of the working classes is infinitely superior to and beyond all comparison with that of their trans-Atlantic order. In fact the humblest labourer here finds himself in the possession of enjoyments which would be estimated as luxuries in Europe. However imperfect the tenement houses may be when compared with the dwellings of the wealthier classes, still they are comparatively spacious, well-lighted and accessible to current ventilation. The food of the working classes is bounteous and wholesome, and there are very few families but have animal food at least once a day. Copious water supply to tenements ensures all facilities for cleanliness; and public baths are accessible to all at a moderate rate. A glance at the attire of our industrial classes on a Sunday, gives us volumes of proof of the comparatively easy circumstances by which they are surrounded. What might have been anticipated *a priori* from their superior conditions is confirmed by practical observation, viz., that our industrial classes exhibit a better general health, a robust appearance, and none of those excessive forms of nutritive derangement which are comprised under the collective term of strumous disease. The contrast existing for instance between the populations of New York and Vienna can scarcely be overdrawn. In the Austrian metropolis almost every person one meets looks sallow, anemic, attenuated, physically impoverished, afflicted with swellings, ulcerations, and cicatrices of the cervical glands, of which in our midst there is hardly a trace.

The comparison to which I have drawn your attention, gentlemen, is between Europe and the United States, with which I am best acquainted. Whether my remarks apply equally to your prosperous Provinces, you can decide best.

Notwithstanding the superior advantages, facilities, and prosperity of our industrial classes, and notwithstanding the fact that scrofulosis in general has found amongst them but a limited ground of development, we meet, at least in the Northern States, with numerous cases of articular diseases for which constitutional causes cannot be assigned. What therefore is plausible for Europe is inadmissible with us, and this very circumstance was the first shock which unsettled my belief in the theory of strumous causation. In defence of the old theory it may be urged

that tuberculosis prevails in the United States, and satisfactorily accounts for the occurrence of joint diseases. Such an argument can not be accepted as tenable, though the facts appropriated as premises may be conceded. For it so happens that tuberculosis is met with North and South, and apparently much more frequently in the latter. Among the negroes of the South, for instance, glandular affections are quite common and easily accounted for by their principal vegetable diet and hygienic indifference. If therefore the proposition be correct it will follow that joint diseases are more frequent in the South and especially amongst negroes than in the Northern section of the country. This is however not the case: on the contrary the further one proceeds South the less he meets with articular diseases; and according to the statements of competent surgeons of that region, they become perfect rarities near the Bay of Mobile, the Gulf of Mexico, and the West Indies. But irrespective of this geographical limitation of joint diseases, we have a right to demand ocular demonstration of the *tubercular deposit* alleged to be the *corpus delicti*. There are very few physicians who pretend to have seen tubercle in the affected structures. Thus, for instance, Professor Gross, who is one of the warmest advocates of the theory of tubercular causation, owns that he has never met with tubercular depositions in joints. He finds sufficient evidence for his opinion in the fact that a patient dies from tuberculosis after having suffered from joint disease. This sort of logic must pass for what it is worth. It has never converted me. For by the same reasoning we might come to the conclusion that a furunculus, a paronychia, or a fracture, happening to a consumptive patient, are of a co-ordinate character with tuberculosis of the lungs.

Gentlemen, I have submitted to your mature consideration my doubts as to the correctness of the time-honoured and prevailing opinion of strumous and tubercular causation. All I can desire of you is to look upon my arguments as suggestive. For my part I have bid adieu for ever to the old theory as an unsafe guide.

Now if the facts adduced are true, and my reasoning consistent with them, and if I have made out a clear case against the strumous or tubercular causation of joint diseases, it follows that there must be causes other than those heretofore assigned. To find them out and to prove them as such will be "the next business in order."

I have already observed that about ninety per cent of all articular affections fall upon the period of infantile development. The proportion is however very different in different ages of childhood. An articular disease is certainly a rarity among infants,—we seldom see it before the expiration of the third year. From that age upwards to the

fifth year, these affections become more numerous and attain perhaps their highest numerical proportion at the sixth. Then they commence to diminish gradually, and at about the tenth year they are reduced to but few recent cases. Towards puberty these are probably as rare as during the infantile period. I need not state that these facts are based upon a careful statistical record of my own and are borne out by the experience of well employed surgeons. I think it is apparent that the strumous theory does not offer a satisfactory explanation of these facts, for the prevalence of the disease is not supposed to be restricted to any particular period of childhood. We must therefore look for a more consistent explanation. The period of infancy is that of special parental protection. The child is mostly under direct charge of the mother or nurse, independent locomotion not having then commenced. The second and third year of infantile life enjoy less or more the same protection against accidents and injuries. With the fourth year a new epoch commences. The child is curious and inquisitive; it wishes to examine and to touch everything; it climbs upon chairs and tables; it trusts to its own guidance and escapes from the protecting eye of its mother; and it is thus exposed to all sorts of falls and mishaps. With advancing age and knowledge of its surroundings the child becomes more appreciative of danger, and more careful and timorous in its ventures. At a later period, when judgment and prudence assume their sway, accidents and particularly falls become of rarer occurrence. Reasoning from these facts I cannot but conclude to regard traumatic injuries as the sufficient cause of joint diseases during childhood.

With this supposition coincides a cordon of additional facts equally demonstrative, viz:

1. Joint diseases are not limited to any particular class of the population, nor to cities; on the contrary they occur amongst all classes of society and in agricultural districts as well as in the densely populated foci of industry.

2. Joint diseases conform to certain latitudes.

3. Certain joints are more often affected than others.

4. Boys are more subject than girls, and sanguine and impulsive children more than phlegmatic and indolent.

5. We rarely fail to trace the attack to traumatic antecedents.

6. Constitutional treatment *per se* has proved of no avail in articular affections.

7. In fine, positive results follow the exclusive local treatment of these lesions.

At 2 I do not mean to imply that climate exercises any direct or spe-

cific influence upon the numerical distribution of articular diseases, notwithstanding the undeniable facts previously adduced. But inasmuch as the temperament, usages, diet, domestic habitations, tastes, employments, &c., of the inhabitants differ according to latitude, we may be justified in speaking thus of the generative causes of disease. In comparing therefore the Northern and Southern States of the Amerian Union we notice differences in this respect most material in their ulterior pathological consequences. The temperament of the purely Southern people is less sanguine and excitable than that of their Northern compatriots. The calmness of the Southern man is the result of his climatic constitution, and is in every respect natural, whereas the imperturbability of the New Englander is the effect of incessant social and religious discipline. The diet in one section is greatly farinaceous, in the other more nitrogenous. The habitations of the one are spacious but low, whereas the other dwells in four storey buildings. There the streets and the environs of dwellings are left as nature provides; here they are paved and improved in various ways with hard surfaces. Ease has pervaded society in the South, whereas ours has been marked by constant bustle, expansion, restless and ambitious strife and collision of interests. Our employments are greatly those of a commercial and manufacturing people, theirs are those of an agricultural community. In other words our pursuits engender toil, emulation and egotism, while their condition is simple, calm, and primitive. The same contrast exists less or more between the inhabitants of cities and agricultural districts. What bearing, you may wonder, have these differences upon the statistics of joint affections? Simply this that a Northern child is more impulsive, ambitious, and quarrelsome, because he is confined, restricted in space, imposed upon and brought into collision with other children. His animal diet renders him stronger and more irritable. Hence his liability to casualties. Again a fall from a high staircase, or from a horse, waggon, fence, &c., to a hard side-walk or pavement occasions more serious effects than the same fall upon soft ground.

At 3 it is to be noted that among all joint diseases those of the knee are most numerous; next in number come those of the hip joint; next those of the bones and joints of the spine; then those of the elbow; then those of the tibio-tarsal articulation, &c. These well known and acknowledged facts are not accidental, and the old theory fails to account for them.

It has always been alleged that strumous disease has particular affinity for the spongy and reticular structure of bones. If this be so, the tarsal, carpal, and vertebral bones should engender the disease more readily

than any other portion of the skeleton. Yet as we have seen the numerical preponderance happens at the knee and hip articulations, while both these joints being more than any other exposed to injury by falls, blows, and other accidents.

The proposition under the heading 4 needs no special comment. The fact that boys are more subject than girls to articular affections must be accounted for by their greater exposure to injuries, It is incompatible with the theory of strumous causation, because girls are more exposed than boys to the causes of that disease. At proposition 5 it is worthy of recollection that at certain periods of childhood accidents are of very common occurrence, though they are generally disregarded as causes of disease, unless they immediately eventuate in great pains, contusions, wounds or fractures. The proof of connection is sometimes difficult because weeks and months may elapse before the pathological effects clearly manifest themselves. In rare cases one follows the other so closely that the mutual relation is patent and unmistakeable. That apparently slight injuries may suffice to lead to grave consequences, I have had frequent opportunities of observing. Allow me to relate but two instances in exemplification.

A little girl fell backward flat upon the sidewalk. She immediately experienced violent pain at a certain portion of the spine, and had to be carried home. I saw her soon after the fall. One of the spinous processes (the 5th dorsal) not only projected perceptibly, but was painful to the touch. The advice to keep the patient in the recumbent posture for at least three months was followed but for a short time, and the child was permitted to resume locomotion. At the end of six weeks, during which time the dorsal protrusion had noticeably increased, I was again invited to see the case. The little girl was then suffering from intense pleuritis of the left side, which eventuated within three days in copious exudation into the pleural cavity with dislodgement of the heart. Death soon ensued.

The view I held and expressed was that the recent disease was connected with the fracture of the spine; that most probably an abscess had formed at the injured point in the column, and had discharged its contents into the pleural sac. The father, in order to relieve his mind from the indirect imputation of neglect, repressed his aversion to an autopsy. I need not assure you, gentlemen, that my diagnosis was in every particular verified. There was, indeed, a fracture of the fifth dorsal vertebra, though of very limited extent, a mere chipping off of a wedge-shaped fragment still connected with the next lower intervertebral fibro-cartilage. There was next an abscess in front of the frac-

ture and beneath the periosteum, with, as it were, two compartments, one on either side of the spine, communicating through the fracture. The left compartment, the larger of the two, had effected a perforation into the left pleural cavity. Besides this, disintegrations of bone, cartilage, and adjacent structures in general occupied the affected locality.

The other patient was a middle-aged man, a music teacher, of German extraction. When under the temporary influence of liquor, he fell from an elevation of about five feet, and struck violently the internal circumference of his right knee joint. The intense pain that set in forthwith, soon sobered him, and impressed him strongly with the apprehension of grave injury to the articulation. A physician was immediately called but failed to discover any injury. I saw the patient the third day after the accident. There were no superficial traces left by the fall. The articulation was hot, swelled, flexed, and extremely tender to the touch. From time to time, spastic oscillations appeared, and terrified the patient, who was pale and dejected from want of food and rest. I placed him under chloroform, extended the extremity, and secured the position by appropriate appliances. The trouble yielded without any further treatment; and, for aught I know, the patient recovered from an attack that might have permanently affected the articulation.

The interval of time between cause and effect, is, after all, more apparent than real. Many cases, especially those of affections of the spine, commence in so insidious a manner, and the initiatory symptoms are so general and indefinite, as to be excusably misinterpreted not only by the parents, but even by the professional attendant. Among other cases of the kind, I remember one in particular, which had puzzled the physicians for a number of months, until a correct diagnosis was obtained.

The patient is a little boy of fine organization, of a most impressible and active nervous system. His agility and daring even to this day are extraordinary, notwithstanding the conspicuous posterior curvature which has gradually become established. He may have been five years old, or thereabouts, when he sustained a fall from a fence six feet high, causing at the time considerable alarm to him and his parents. But no perceptible disturbance of his health immediately following, all fears were dismissed and forgotten. A few weeks after the occurrence, the patient exhibited signs of general ailment, decrease of appetite, pallor, weakness, disturbed rest, irritable temper, and indisposition to join in the frolics of his playfellows. Occasionally the pulse became accelerated, with contemporaneous thirst and increase of temperature. He complained of a transient pain in the stomach. His alvine evacua-

tions were sluggish, badly mixed, dry, of light colour, and offensive odour. The abdomen was often distended with gas. The urine was pale, and deposited a whitish sediment. These symptoms prevailed for months without material change. The diagnosis of an "affection of the liver" was not without plausibility, inasmuch as that organ had become enlarged in all its diameters. At the end of the eighth month, frequent and painful hiccough was observed, and tenderness of the back became manifest on motion of the spine. In fine, his gait became awkward, and the movements of his body restrained and stiff. He craved for rest and support, which he obtained by placing his elbows on suitable objects, and his head upon the palms of his hands. Ten months after the accident my services were called into requisition. At this juncture it was easy enough to recognize the true nature of the complaint. The marked prominence of several spinous processes at the thoracolum-bar region of the spine rendered the diagnosis both transparent and conclusive. To the experienced practitioner, it may seem surprising that the diagnosis was not sooner accomplished, and the disease of the spine arrested by appropriate means. The entire train of symptoms pointed at a local lesion of progressive tendency: and a searching examination could scarcely have failed to reveal the locality of the affection. Nevertheless when we recollect the difficulties in the premises, the aversion of children to manual examination, the disinclination of parents to see their offspring thoroughly handed by the surgeon, and last but not least the limited field of general practitioners for fully observing and becoming conversant with these insidious cases, we will be sparing in our censure even if it should be warranted. It cannot be denied that in the case submitted, there was an uninterrupted connection between the accident and the subsequent disease. I have made the same observation in many cases that have come under my charge and have no doubt that other observers have the same experience. Nevertheless I am far from denying that joint diseases may arise from constitutional disorder likewise. But according to my clinical researches their number is proportionately insignificant. In cases of this character we find originally more than one joint affected, though the disease may eventually fix itself upon one articulation. This appertains more particularly to rheumatism, gout, and especially to pyemia. When on the other hand but one joint suffers from the beginning to the end, and the constitutional symptoms supervening are in conformity with the inevitable reaction of the local process upon the general system, then it is rational to infer that the local affection is of strictly local causation.

Every candid practitioner will agree with the aphorism enunciated

under 6. It is certainly a simple fact that the anti-scrofulous treatment of joint diseases has disappointed both him and his patients. My own clinical training coincides with that period in which the old etiological views held unbounded sway. They consequently regulated my action at the bedside. I followed with full confidence and scrupulous exactitude the doctrines of my distinguished preceptors Rust and Von Graefe. I coveted cases of this class, which seemed to be tacitly slighted by the more experienced members of the profession. But all my efforts were in vain. I accomplished no material change that could have been claimed as the result of devoted services. My cases took the usual course to complete obliteration of the respective joints,—malposition of the affected extremities, suppuration, caries, exhaustion and death. Nay more, I had the mortification to perceive that I could but rarely control the intense pain usually attendant upon such cases. Similar admissions have been made by other experienced practitioners, and I am led to believe that the negative results of anti-scrofulous treatment of joint diseases is now generally conceded by that portion of the profession whose opinion has value.

In the seventh aphorism, I broadly assert without fear of contradiction that in the treatment of joint diseases, local appliances scarcely ever fail of modifying or subduing the morbid process. For the last ten years I have held these views, and practically tested them at the bed side; and I can candidly and most emphatically assure you that the results thus attained have been most satisfactory in every particular. In but few cases have I ever had any need for constitutional remedies. Most of them yielded readily to local means; and with the local improvement the prevailing constitutional disturbances subsided. When thus rest and appetite were insured, the patients increased in *weight*, and rapidly improved in appearance and feeling. I need hardly state that my therapeutic views on this point were slighted for a number of years by those men to whom the profession look up for precept and example. But when Dr. Davis' portative extension apparatus became generally known the professional mind underwent a material change and then turned its attention to the subject. A few years ago the New York Academy of Medicine discussed the subject of hip disease at successive meetings. Most of those who participated in the discussion admitted in emphatic terms the therapeutic efficacy of that instrument, retaining at the same time the old tubercular theory of causation. Nobody seemed to notice the contradiction between theory and practice, and it was then and there that my views gained the ascendency. I simply stated on that occasion that but one could be right. "If hip disease were the consequence of

strumous invasion, a portative extension of but few pounds could have no effect whatever in relieving or curing that complaint; and if it actually had the effect alleged, it would be the most undeniable proof against the constitutional character of the disease." The attempt to refute my logic was as feeble as it was unsuccessful, and from that date it may be said that the new theory was admitted to scientific citizenship. I shall not on this occasion enter more extensively upon the subject, inasmuch as I have to recur to it when speaking on the treatment of articular diseases.

Surgical Cases in the Practice of Louis Bauer, M.D., M.R.C.S. Eng.
Reported by F. W. BIRD, M.D., Queen's College, Canada.

In the practice of every eminent surgeon, cases are constantly occurring illustrative of contested theories, and full of scientific interest to the speculative student of the healing art, as well as of great practical value to the earnest and studious practitioner. Most of these, however, are lost to the profession through want of time in the hurry of pressing business and the turmoil of passing events. But few surgeons combine the habit of plunging into one bold contest after another with the higher grades of disease, achieving grand results in quick succession, with the less brilliant qualities of the reporter and compiler. To the ant-like patience of the latter in accumulating and elaborating the materials upheaved by stronger hands, we are mostly indebted for the well adjusted magazines of knowledge which every good medical library contains. In preparing a few of the cases of Dr. Bauer for publication in your valuable journal, I hope to rescue from oblivion, facts and observations which afforded me much pleasure and profit, and I think cannot fail to interest your readers. The proper preservation of isolated cases like these can only be effected through the medium of medical journals, fitted as they are for specially recording events and suggestions that interlie the great periods of medico-surgical history, and are demanded for use before they can be associated with sufficient matter to be issued in book form. Your readers, being mostly medical men in practice, will, I trust, appreciate my motive in avoiding the tiresome minutiæ with which many clinical reports are lumbered, filling valuable space with commonplace descriptions and details to be found in ordinary text books, and thus depreciating in worth the journals which contain them.

CASE I.

Caries of the Spine—Abscess—Asthma Millari—Death—Autopsy.

The little patient was placed under the care of Dr. Bauer on the 8th

ult. She was of a healthy family and of the tender age of three years and nine months. Four months ago she fell against a wall from a chair in such a manner as to force the head violently forward and downward upon the chest. From that time she suffered severe pain at the neck, became much attenuated, and experienced constitutional derangement. On examination the cervical portion of the spine was found to incline, and the head to be bent backward. At the cervico-thoracic portion of the spine there was a marked prominence of several spinous processes of which the first dorsal projected farthest. While the Doctor was carefully proceeding with the examination, the patient was suddenly attacked with so great an occlusion of the rima glottidis as to render her breathless, cyanotic, and slightly convulsed. This attack lasted at least fifteen seconds, and gave rise to serious apprehensions of instantaneous death. The examination was discontinued, but enough had been elicited to furnish a conclusive diagnosis, of which the following contains a summary. "In the peculiar fall of the child the body of the first dorsal vertebra had been either simply fractured or else crushed. The injury having been entirely disregarded for so long a time, it has given rise to inflammation and suppuration. There is most probably a cylindriform abscess in front of the affected spine, encroaching upon the œsophagus and the recurrent nerve or nerves. Hence the attacks of Millar's asthma. The prognosis is exceedingly unfavourable, and the child will not survive many of these paroxysms. The recumbent posture on the water bed is probably the only means of temporarily alleviating her sufferings." On the 12th ult. (four days after the reception of the case) the death of the child was reported, having taken place in the exact manner foretold. Fortunately an autopsy was permitted, at which I assisted. We found an abscess in front of the spine, commencing at the fourth cervical and terminating at the fourth dorsal vertebra. The anterior wall of this rather narrow abscess was formed of the periosteum and the common ligament, and encroached materially upon the œsophagus. The diseased portion of the spine was removed. The specimen consists of the fragment of the seventh cervical, and of the fifth, second, and third thoracic vertebræ, the next superior and inferior bones being mainly healthy though slightly corroded. The bodies of the last cervical and first dorsal vertebræ are entirely destroyed up to the place where the bodies join their respective arches. Of the second dorsal a large portion of the body has disappeared, whereas the body of the third dorsal has been but slightly affected. Between the seventh cervical and first dorsal, there is an undue mobility. The first and second ribs on each side have lost their vertebral attachment. The spinal cord is deprived of its anterior bony protection

through the destruction of the two vertebral bodies. There is a small sequestrum remaining, obviously a part of the seventh cervical. It is surprising that under these circumstances no paralysis has taken place. The matter that filled the abscess was rather thin, but presented otherwise the ordinary attributes of pus. The rapid destruction of the vertebral bodies in comparatively so short a time, scarcely a vestige being left, is a matter of great pathological interest. Hardly less interesting than this is the question of causation. There appeared to be nothing in the child of a tubercular diathesis either inherited or acquired, nor have we found any morbid substance that could possibly be confounded with tubercular deposit. On the other hand it is known that the child met with a serious accident from which its sickness can be dated, and which was moreover of a description to cause at least a fracture if not a comminution of the vertebral body. And lastly it is substantiated that the patient was entirely well until the accident occurred, and from that time until its death suffered from symptoms, to all appearance, entirely local in origin. I consider myself therefore justified in assuming that the specimen represents one of those numerous cases of caries and posterior curvature of the spinal column that are of a strictly traumatic origin, although the present pathological conditions are of so advanced a character as to leave not a single direct proof.

Case II.

Stone in the Bladder of a Child—Bilateral Section Performed—Recurrence of Calculus—Opening of the Old Wound—Second Bilateral Operation—Second Recurrence of the Disease—Injection of the Bladder with Water Acidulated with Nitric Acid—Final Recovery.

The patient, who was not quite three years old, had already suffered some months from difficulty in passing his urine, when in the summer of 1865, Dr. Bauer was applied to for aid. The exploration of the bladder gave positive evidence of calculus for which an operation was suggested and accepted. A calculus of the size of a small chesnut, with a smooth surface and composed of urates, triple phosphates, and mucine was removed by the bilateral section. Before the patient left the operating table a most careful search was made for other concretions, with a negative result. The mucous membrane was entirely smooth and presented no recesses where fragments might have concealed themselves. Repeated injections through both urethra and wound brought no further *corpora delicti*. Though the wound healed very kindly in the usual time, the patient very soon complained again of his old trouble which in the course

of three months became as intense as it had been before the operation. At this time the wound re-opened, and a fistulous track could be followed to its termination in the bladder. The sound revealed new calculus. A diathesis for the formation of these concretions being unquestionable, a mixture containing nitro-muriatic acid was given with a view to its correction, accompanied with other appropriate treatment. After a reasonable delay, the result being unsatisfactory, the sound still marked unerringly the presence of the offending substance, and no alternative was therefore left as to the choice of method for its elimination. The former operation was repeated in such a manner that the closure of the fistulous opening was included in the plan. No untoward incident disturbed the progress of the second operation. Three calculi of the same composition as the former were extracted. One had acquired the size of a hazelnut, and a smaller one was coniform and seemed to have shaped itself to the neck of the bladder. At this time the vesical walls were slightly covered with concretions which had to be carefully detached. The utmost attention was paid to the thorough cleansing of the parts concerned, and the patient was not removed until the fullest assurance was reached that nothing remained. The wound healed very rapidly, and was closed on the fourteenth day. At the end of the sixth week, after the second operation, new troubles commenced. The urine passed guttatim, and apparently with excruciating pain. At one time there was complete suppression of urinary discharge. In attempting to introduce a catheter, the doctor met with calculus in the urethra, obstructing the passage. The child was then placed upon the operating table, under chloroform, and, by means of Daviel's spoon, the urethra was cleared for a considerable extent; but a few pieces in the membranous portion had to be pushed back into the bladder, in order to re-open the passage. The sound detected several fragments of calculi in the bladder. The further proceedings in the case were subjects of anxious consideration. Dr. Bauer felt disinclined to repeat the operation. The tender age of the child, with its high state of nervous susceptibility, induced by continued suffering, and the very irritable condition of the bladder, were not inviting indications for lithotripsy. Nothing seemed to be left, but copious injections into the bladder rendered efficacious by chemical agents. The doctor had convinced himself, from repeated experiments, that diluted nitric acid would rapidly dissolve the earthy portion of the calculi, leaving a soft and pulpy substance, which could be easily expelled. On this supposition, he injected, with due care, the following:—℞ Aquæ Destil. Oj.; Acidi nit. dil. ʒ v. M.; Injice omn hora quarta.

After three days' treatment with these injections, which were well borne by the patient, and caused no inconvenience whatever, a quantity of grumous substance was from time to time discharged, with evidently increasing relief. Since then the trouble has entirely subsided. The use of nitro-muriatic acid internally was directed, and adhered to for six consecutive months. This most probably had something to do with the final prevention of the difficulty. The case is interesting in many respects, but particularly in this, that, by means of injection, the calculi were so dissolved as to leave the mucine to be easily voided *per vias naturales*. Injections for this purpose have been often recommended, but they have hitherto given such unsatisfactory results as to be almost entirely abandoned. Very few surgeons deem them worth resorting to; and Dr. Bauer might have omitted them also, had not necessity forced him to test their usefulness.

Brooklyn, N.Y., February 5th, 1867.

REVIEWS.

A Handy Book of Ophthalmic Surgery for the use of Practitioners. By JOHN Z. LAURENCE, F.R.C.S., M.B., (Univ. Lond.) Surgeon to the Ophthalmic Hospital, Southwark, editor of the Ophthalmic Review, &c., &c., &c., and Robert C. Mooore, House Surgeon to the Ophthalmic Hospital, Southwark, with numerous illustrations. 8 vo. pp. 191. Philadelphia; Henry C. Lea, 1866.

Ophthalmic Surgery has, during the last fifteen or twenty years, made most rapid strides, so much so that the busy practitioner has not the time to devote to the perusal of the many excellent monographs which are being daily added to the store. With a view of bringing within a small compass the principles and practice of modern Ophthalmic Surgery the authors of this work have issued it to supply a want very generally felt.

In describing the symptoms of any affection, they have limited themselves to those most essential for the recognition of disease, and in describing operations they have retained alone those details which are necessary for their performance.

To the practitioner it matters not what are the remote causes of disease. What he wants chiefly to know is how to recognise diseased action where it exists, and having determined what lesion is present, how to treat it most effectually. Mr. Laurence is surgeon to the Ophthalmic Hospital, Southwark, and R. C. Moore is his House Surgeon; in this institution the authors have had rare opportunities of observing diseases of the eye

where upwards of 6000 cases are treated annually. The practical details are based on the observations of some eight years, so that the treatment they advocate bears the imprint of extended experience. The work consists of seventeen chapters. The first chapter is devoted to methods of examining the eye. Chapter second, general remarks on ophthalmic operations. Chapters three to twelve describe diseases of the orbit; of the eyelids, of the lachrymal apparatus; of the muscles of the eye; injuries to the eye and orbit; diseases of the various tissues, and crystalline lens. Chapters thirteen and fourteen treat on amaurosis and amblyopia, glaucoma, &c. The remaining chapters are on diseases affecting the whole eye ball; on vision and optical defects of vision. This work is a most excellent *résumé* of all that is of practical utility in this specialty, and will be found of great value by general practitioners, those who, living at a distance from the center of Medical and Surgical observation, are frequently called upon to treat diseases of the visual organ. It is amply illustrated by clear and distinct wood engravings, and further enriched by a series of instructive and highly interesting cases. The type is large and well impressed, and altogether the work is most creditably issued by the American publishers.

A Practical Treatise on the Physical Exploration of the Chest, and the Diagnosis of Diseases affecting the Respiratory Organs. By AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, &c., &c., &c. Second Edition, Revised. 8vo., pp. 595. Philadelphia: Henry C. Lea. 1866.

Dr. Flint's treatise on the exploration of the chest is written in his usual elegant style. There is a general tone of originality, which gives force to its practical teaching, and which must obtain for this treatise the position of a standard work on the diseases of the respiratory organs. The first edition of this work was published in 1856. It has been some time out of print; but during the ten years which have elapsed between the first and second editions, the author continued to give special attention to the physical diagnosis of diseases of the chest. The opportunities of the author have been considerable, as throughout the interval which has elapsed since the appearance of the first edition, he has been connected with several large hospitals, both in New Orleans and New York, where he seized with avidity every opportunity of perfecting himself in this department of his profession. The author remarks:—

"Physical exploration may be mastered by means of books and lectures, together with such clinical opportunities as are offered in any hospital of considerable size; but the saving of time and labour effected by systematic bed-side instruction in large hospitals is immense; the amount of progress made in a few weeks is greater than is possible during many months or even years without these advantages. It would conduce much toward a more general diffusion of the practical knowledge of auscultation and percussion, were a larger number of competent physicians connected with large hospitals to become engaged in forming classes for private instruction in these methods of physical exploration—a department of medicine which commends itself as not less attractive than important."

The author sets out with an introduction, in which are given, in the first section, the Anatomy and Physiology of the Respiratory Organs, and in section ii. he gives the Topographical Divisions of the Chest. The rest of the work is divided into two parts.

The first part sets out with some admirable remarks on the value of physical signs, and on the best method of cultivating a knowledge of them. In turn are considered the various methods of physical exploration, as percussion, auscultation, inspection, mensuration, palpation, and succussion; also the phenomena elicited by these means in health and disease. To each is apended an historical *résumé*, concise, but of considerable interest.

We notice throughout this part that there is an absence of that multiplication of terms to denote very simple references, which is much indulged in by most writers of the present day. It does seem that, lacking originality in other respects, the tendency of writers of our day is to smother up their observation with newly-coined words, so that the unfortunate student has to acquire a new nomenclature before he can appreciate the writings before him. It is refreshing, after perusing a work filled with unintelligible jargon, to get hold of one like this of Dr. Flint's, written in pure and readable English.

The second part of the book is devoted to the diagnosis of diseases affecting the respiratory organs; and here are carefully considered the physical signs which present themselves in each disease. The chapter on Pulmonary Tubercle forms a noteable feature in this work, and is replete with interest.

The work is well and handsomely got out, being in H. C. Lea's best style.

PERISCOPIC DEPARTMENT.

Surgery.

HOW SHOULD GUN-SHOT WOUNDS PERFORATING THE KNEE-JOINT BE TREATED?

By JULIAN J. CHISHOLM, M.D., Professor of Surgery in the Medical College of South Carolina, U.S.A.; formerly Surgeon in the Confederate Army.

As a rule, gun-shot wounds perforating the knee-joint are so fatal under the usual methods of treatment that military surgeons are seriously embarrassed in selecting a course from which they might hope for a successful issue. In European army experience such cases do very badly, whether left to themselves, or whether operated upon by amputation or excision. In by very far the majority of cases the patient dies, proving, as the result of experience, that gun-shot wounds perforating the knee-joint are among the most fatal wounds of the battle-field. In the large experience gathered from five years' war in the United States, it would appear as if the previous reports of European army surgeons had been confirmed, and that amputation of the thigh in recent perforating wounds of the knee-joint offered the best means of saving life. In recent years resection or excision of the heads of bones crushed or injured by a ball has been urged as a substitute for amputation, and unfortunately in both the Federal and Confederate armies resections became too much the fashion, many lives being sacrificed to this modern operation. Every joint, and nearly every long bone of the extremities, was freely excised, often, as in the shoulder and elbow, with the best results; but in the shafts of long bones disastrously, and in the knee and hip-joint with the most fatal consequences:—

Federal Army Reports to July, 1864.

	Mortality.
Primary excision in the shaft of the femur	84 per cent.
Primary excision of the knee-joint	90 "

Confederate Army Reports to February, 1864.

	Mortality.
Primary excision of the knee-joint	75 per cent.(a)

Where amputation was resorted to as the remedy for gun-shot injuries perforating the knee-joint, the results were as follows:—

(a) This percentage would have been larger had all the fatal cases been reported.

Federal Army Reports to July, 1864.

	No. of cases.	Mortality.	Per cent.
(b) Amputation through the lower third of femur..	243	112	46

Confederate Army Reports to February, 1864.

	No. of cases.	Mortality.	Per cent.
(b) Amputation through the lower third of femur..	259	126	46

These results of amputation in the lower third of the thigh for injuries of the knee-joint are so satisfactory that where the tissues about the articulation are much lacerated, or the bones much crushed, amputation will always be resorted to. But there is a class of cases in which the perforating injury to the joint appears trivial,, or in which the bones are to no great extent injured, and in which the surgeon can with difficulty overcome the patient's abhorrence to an amputation. Under these conditions, the experience of Confederate surgeons in attempting to save the limb gives so satisfactory a result, that it becomes a question whether conservative surgery may not be more extensively used for gun-shot wounds of the knee-joint than it now is.

The following table was compiled from Confederate army reports:—

	No. of cases treated.	Cures.	Deaths.	Per cent. of Mortality.	Average duration of treatment in fatal cases. No. of days.	Longest period. No. of days.	Shortest period. No. of days.	Average duration of successful treatment. No. of days.	Greatest period. No. of days.	Least period for cure No. of days.
Knee-joint perforations without amputation (c).....	103	50	53	52	40	163	15	166	285	96

(c) A very much larger number of cases had been reported by Confederate surgeons, but these reports had not been examined or their contents collated when the above tables were compiled. These only include such as had their termination satisfactorily traced in February, 1864.

It may be argued that the successes exhibited by this table must be partially attributed in many cases to the trivial character of the injury, which could not have implicated the cavity of the articulation. An examination into the duration of treatment of the successful cases gives an average of 166 days, the shortest period of successful treatment being in only one case 96 days, which of itself marks in the strongest terms the very serious character of the least dangerous case; clearly proving

(b) Only such cases are engrossed in these Reports as had been traced to their termination at the date of the Report; the many cases not discharged from hospital are not incorporated.

the suppuration and the too much to be dreaded suppurative synovitis. Simple flesh wounds in the neighbourhood of joints heal usually without difficulty in two or three weeks. It may be presumed that most, if not all, of the cases of knee-joint wounds, retained for conservative treatment, were perforations by balls, without crushing of bones being detected. The surgical statistics of the Confederate army would warrant us in treating all such cases without amputation or resection of the heads of the bones forming the joint. For the successful treatment, the patient should be kept as quiet as possible, in a well ventilated ward or tent, with his nervous system kept at the least stage of irritation by the continued administration of opium. The general condition of the system is to be constantly watched, excretions promoted, and such tonic and supporting remedies administered as will control the circulation, increase the tone of blood-vessels, and moderate inflammatory action. The most conspicuous of these elements of medication are opium and iron. The limb should be kept at absolute rest, which can be best insured by securing it to a posterior splint, extending from the buttock to beyond the heel. To the surface about the joint are continuously applied cold evaporating lotions, of which iced water is the simplest and best. This, however, can be medicated so as to increase the evaporation and the refrigeration of the external articular surfaces. As soon as the swelling, redness, and pain in the superficial structures with systemic irritation indicate synovitis with suppuration, the joint should be freely laid open, the articulating cavity fully explored, and all the fragments of bones or foreign bodies removed, and a free outlet given to the purulent discharge. It is from the apparently bold surgery of opening freely the joint that the best results are obtained. During the entire treatment of the suppurative stage the best antiphlogistic remedies are found to be nutritious food and the free use of alcoholic stimuli.

In cases in which there was excessive engorgement of the limb, with a general suppurative disposition which, when it occurred constantly, foreboded evil, the most satisfactory results were obtained in a few cases in which the excessive circulation in the limb was suddenly checked by the ligation of the femoral artery. Surgeon Campbell, who introduced this practice into the Confederate military hospitals, considers it a safe and powerful antiphlogistic remedy. The previous development of vessels under inflammatory progress insures the limb against mortification; whilst the control of the circulation from the ligature will in thirty-six hours so reduce the size of the limb and arrest profuse suppuration as to change completely the aspect of the member.

Should the ball in the passage through the knee have crushed the

heads of the bones, and the case be deemed too serious to warrant treatment without an operation, the experience of both Confederate and Federal army surgeons unanimously condemns primary resection of the knee-joint. In every such instance the life of the patient can best be preserved by amputating through the lower third of the thigh, an operation which army experience proves to be preferable to disarticulating through the knee-joint.

Primary resection of the knee-joint is so disastrous as a field operation, that it should be discarded from field practice by army surgeons.—*London Medical Times and Gazette.*

WHEN ONE EYE ONLY IS BLIND, IS IT PRUDENT TO ATTEMPT TO RESTORE THE SIGHT WHILE THE OTHER REMAINS PERFECT?

By HAYNES WALTON, F.R.C.S., Surgeon to the Central London Ophthalmic Hospital, and to St. Mary's Hospital.

THIS is a question that is put to me many times in the course of a year. I gather from my intercourse with Professional men that there exists an impression against interfering, although I could never discover among them any sufficient grounds for the opinion, nor indeed collect any data. The idea seems to have come down traditionally from an age when ophthalmic subjects were but little understood. I have sought in vain for any definite rules among the treatises on the eye by our countrymen. What is the opinion of the Surgeons of the present, who are fitted by their connexion with Ophthalmic Surgery to speak authoritatively, and who have no doubt examined the question, I do not know. I could wish to have the opinions of each of them all as they exist at this moment, and to hear such in its genuineness, without the influence, bias, or effort inseparable from a discussion. There is a necessity for me to have some definite rules to act on. The exercise of my calling demands them. My patients, too, seek for them. In discussing the subject, there are facts to be recognised, conditions and circumstances to be considered. There must be reviewed the physical causes that render the eye useless, the operations that are needed, and the probability of the result, and the quality of the sight that may be restored.

It may be stated in general terms that a person who has lost an eye, besides being blind on one side, has but a very limited field of vision for near objects beyond the centre of the face, and which angle is regulated by the degree of prominence of the nose; that the definition of sight which depends on binocular vision is totally lost; that the power of accurately estimating distance is lost, and in consequence of this mistakes

are made in certain mechanical acts, as the pouring of a liquid from one vessel to another, although the vision is quickly rectified by touch. This defect may remain in degrees. Whether it is always entirely overcome by those who have lost an eye in infancy I do not know, for it has never occurred to me to ascertain. That with labour requiring minute sight there are more readily developed the many effects of impaired vision than when two are used, because the one organ cannot do the the work of the two. These are points that some one-eyed people are loth to confess, and they cannot be blamed for their caution. It is, therefore, apparent that an individual is the better for two sound eyes, and that that measure is admissible which, while it restores sight, does no harm elsewhere.

And here it is necessary to observe that nothing of value can be gathered from mere spontaneous expression of patients as regards the question, for they cannot understand the subject. Even more than this, when the data from which conclusions can be formed are set before them, they are as likely as not to act wrongly. The accepting or rejecting, then, of a proposal put to them, must be recognised only as a matter of will, which they have the power to exercise or not, and not as a valid opinion. I know of several persons who are now blind in both eyes because they cannot make up their minds to have anything done. Every Surgeon must have seen patients die rather than submit to any operation that would save life.

As the physical defects of the eyeball proper that need operation for the restoration of the function of sight are cataract, and the loss of the pupillary aperture, it is impossible for perfection to be restored. After the removal of cataract, peculiar glasses are needed. In the formation of an artificial pupil, the aperture must be either at the margin of the iris when the quality of the sight is lessened, or in the centre when the lens is absent, and minute use of the eye must depend on cataract glasses. Unfortunately, an eye cannot be fitted with a cataract glass, and brought up to a healthy state so as to match the other eye. The adjusting power is gone, and, for seeing at different distances, glasses of different foci are needed. Therefore arises this important consideration on which the whole matter hinges. Will this kind of sight, which must be inferior to that of the other eye, and at times in marked degrees, be really of material service? It may be premised that, if a Surgeon is to answer from his own knowledge and experience, a long time is required to gather facts and dates; and, to avoid errors, the patients should be watched for years. I speak then from what I have seen, and say yes. I should be deterred from operating only by the probability of the eye being too much damaged to give that amount of sight which is known as useful

sight, on which point much discrimination and a long familiarity with ophthalmic Surgery are imperative. I have made lateral pupils, the crystalline lens being present, and central pupils, the lens being absent. I have selected those cases only in which I was as sure as I could be that the fundus of the eye was sound, and the retina unimpaired, and the other conditions such as would insure the best amount of sight to be derived from such an operation. I place stress on this; for without it, without useful sight can be fairly expected, I would not operate. The false pupil I have invariably made either upwards or downwards, never inwards or outwards, on account of the double vision which would probably ensue. In every case decided benefit has followed. Side-blindness has been removed, and direct vision assisted; in those cases in which the lens was present there has been restoration of the ocular adjustment. I am giving general results, and avoiding minute detail. My last patient was operated on at the Central London Ophthalmic Hospital in September of this year. He was a soldier in a hussar regiment, and was acting as groom to a captain. When he was sent to me I found that there was a dense central corneal opacity with prolapse of the pupil, almost the whole pupillary margin being adherent. I made an upward pupil by drawing out a bit of the iris and cutting it off. Mr. Wilkinson and Mr. Taylor, my colleagues, assisted me. Perfect success ensued. My patient was highly delighted at the addition to his vision and in the improvement in the focussing power of the eye. He was particularly proud of his distant sight, but he could, too, read quickly No. 9 of Jaeger's test type. There was not the slightest confusion in vision. His master, who examined him with care, wrote to thank me for the result, and enclosed a donation for the Hospital.

In every case in which I have made a central pupil after the loss of the lens, the patients have expressed their satisfaction and pleasure at the benefit they have received. I am certain, therefore, from the result of practice, of the advisability in certain cases of making a false pupil when one eye is sound. It would seem that confusion of vision does not, and is not likely to, ensue when there is perfect vision in the one eye. This agrees with the fact that in "colomba iridis" in one eye no confusion follows. I have a far more extended experience in operating when cataract affects only one eye. In the cases selected for my trial and observation, I was quite sure that the other eye was sound and not invaded by cataract.

In nearly all, my patients were under adult age; a few were young adults, and two were past sixty years of age. I will allude to five of them specially, because they were in private, were persons of intelligence, and

all were seen several times after they had left me as patients. One was a well-educated, clever publican, about thirty-two years of age. Cataract formed without any apparent cause. I operated by solution. No better result could have been obtained. The last time I saw him he assured me that he was as pleased with the new eye as ever. He said, "The more I think of it, the more satisfied I am. I no longer run against people and things."

Another was a master builder, 26 years old. His cataract was idiopathic. He sought treatment because the blindness on the one side was "the plague of his life." The result of the operation enabled him, as he expressed it, "to get on better with his business."

The third patient, about 40 years of age, was a clerk in a house of business. His disease was idiopathic. He was fully satisfied. He found the benefit he had been told he might expect.

The fourth was a governess. She came to me several times to show herself after my Professional attendance had ended. She was well pleased at what had been done.

The last was a guard on a railway. He was 30 years of age. The eyeball was wounded by a splinter of wood, and cataract ensued. Since my operation he has been able to attend to his work satisfactorily. Before I operated he frequently blundered, and his defect was apparent to others.

As, then, the evidence which I have collected establishes the propriety of endeavouring to restore an amount of sight less than the standard of health in the one eye, while the other is healthy, I advocate such practice when my opinion is sought. When a child with a wounded eye and an opaque lens is brought to me by his distracted parents, anxiously asking what can be done, I set before them the state of the case, and recommend the removal of the cataract.

After 50 years of age, when, as a rule, the operation for solution is no longer applicable, because the lens is harder and the operation for extraction is the more proper, circumstances are somewhat altered, and the opinion I give a patient is modified, and for this reason. The operation for solution being so very safe, I can with confidence promise success to my patient, if time be allowed me. Extraction is attended with risk of failure. Although I suspect, from all I can learn, that I get as good results from this operation as my neighbours, I know that I cannot get the success that I can command in solution. Then there is one more degree in the quality of restored sight in the extraction cases. The sight may be very good or very inferior, although the term success is applied to all. Added to this, when a person is old, he has pretty nearly done with the

active affairs of life, and he can then get on tolerably with one eye. I endeavour to do my duty in explaining all this to a patient—adding, "If nothing untoward happen, you will be the better for the operation; if it do, you will be none the worse as regards the other eye"—and leave him to determine between the unpleasantness of the operating process and chance of failure, and the probability of success and the addition of a certain amount of sight.

It does not come within the scope of this paper to entertain the question of the removal of a cataract to improve the appearance, nor in early life to prevent a squint.

MODIFICATION OF SYME'S AND PIROGOFF'S OPERATION.

Dr. Post, on behalf of Dr. Isaac Quimby, of Jersey City, exhibited the result of a new operation, in the person of a lad aged about ten years, whose foot had been badly crushed some four months ago. The operation may be described as follows:—A curvilinear incision is made across the dorsum of the foot, commencing anterior to and about an inch below the internal malleolus to a corresponding point on the opposite side, and these are connected on the sole of the foot after the method of M. Pirogoff. After forming the anterior flap and turning it back, the astragalus is carefully dissected from its attachments, care being taken to keep close to the bone. Then forming the posterior flap from the sole of the foot, and keeping close to the bone, the anterior half of the calcaneum is dissected out. This being done, and the soft parts being well retracted by an assistant, the saw is applied so as to remove the anterior half of the bone; then, after rounding off the sharp edges of the bone, and removing any spicula, the posterior half of the bone is applied directly to the articular surface of the tibia. After stitching up the flap in the usual way, a strip of adhesive plaster, three inches in width, extending from the upper portion of the gastrocnemius muscle to a corresponding point on the anterior surface of the leg, and passing directly over the os calcis, keeps the flaps closely and pretty firmly in apposition to the articular surface of the tibia. The plaster is kept there until union between the bones has taken place. The adhesive plaster and the manner of using it is regarded as a very important auxiliary in the treatment, as it effectually prevents the retraction of the muscle of the calf and the gaping of the wound. In the present case the patient was able in six weeks to bear some weight upon the stump, in two months could walk quite well, and in three months was going to school, running and playing with the rest of the boys, with but very little apparent

inconvenience, and without any artificial assistance from crutch or cane. The first advantage of this operation over any other at the ankle-joint is, that the vascular relations of the principal flap are much less disturbed, and there is therefore less danger of sloughing or of tardy and imperfect healing of the wound. The second advantage is, that the integrity of the tibia and fibula is preserved, and there is on that account a better chance for the growth and development of the limb in young subjects. The third advantage is, that the length of the limb, from the hip to the heel, is diminished to so slight a degree that the difference is scarcely appreciable.—*New York Medical Record.*

RADICAL CURE OF HERNIA.

By Joseph Fayrer, M.D., F.R.S.E., Professor of Surgery in the Calcutta Medical College, and First Surgeon to the Medical College Hospital.

I have not yet met with any account of the post-mortem appearances in a case where a successful operation for the radical cure of inguinal hernia has been performed, nor am I aware that there is any such case on record. Having recently had opportunity of examining the body of a man who died from the results of an accident three months and seven days after undergoing this operation, I made a careful examination of the parts, and now have the satisfaction of recording the evidence of complete success.—

J. B., aged 20, a very healthy French sailor, of short stature but extraordinary muscular development and power, was admited into my ward in the Medical College Hospital, on the 28th December, 1865, with an inguinal hernia on the right side. It descended into the scrotum when he stood up or made any effort. He said that the hernia was caused by lifting a heavy spar on board ship about a month prior to admission. When he was engaged in raising the spar, he experienced a sensation of something having given way. A tumour appeared in the site of the rupture, which subsided and reappeared. The erect posture, or the exertion of walking, invariably caused the descent of the gut into the scrotum.

On January 1, 1866, the operation for the radical cure of inguinal hernia was performed with the wooden plug and ligatures. On the 4th, at 8 a.m., free suppuration having occurred, the plug was withdrawn. There was no constitutional disturbance, and on 16th it was reported healed, and, with a pad and spica bandage applied, he was able to walk about. The invagination, up to this period, had remained

firmly in the canal. On the 24th he was put to a variety of tests, such as lifting weights, jumping, climbing up a pole, but the hernia did not return. On the 29th he was discharged apparently cured, after remaining under treatment for about twenty-nine days.

I lost sight of him from this date, but once meeting him in the street, some time after his discharge from Hospital, he said he was quite cured, and free from any signs of rupture.

On April 27, 1866, almost three months after his leaving my ward, he was re-admitted in a sad state of drunkenness, and much injured by a fall from a house. He had fractured the left angle of the lower jaw, and frightfully bruised his head, face, and body generally. The right femur was dislocated into the ischiatic notch, and the gluteal region, as well as the whole of the limb, was much contused and swollen. I observed at the time, in his condition of semi-consciousness, when struggling from pains and restlessness, that the hernia did not protrude. There was no trace of the invagination left. A small cicatrix in the abdominal wall, and another in the scrotum, were the sole indications of the passage of the needle.

The following day, when he had somewhat recovered from the intoxication and shock of the accident, I reduced the hip dislocation. It was evident that there had been much laceration and injury of the soft parts, for the head of the bone could not be retained in position. Pyæmic symptoms set in, and a large abscess formed on the anterior and upper part of the chest. The gluteal region, thigh, and leg passed into a state of diffused suppuration, and the whole limb became infiltrated with pus. Pyæmia was rapidly developed, and he expired of exhaustion on the night of May 7.

Post-mortem examination eight hours after death, or on the morning of May 8, revealed extraordinary mischief. The limb, pelvis, hip-joint, and thorax were more or lesss infiltrated with pus. The head of the femur was dislocated from the acetabulum; the muscles and ligaments were much lacerated across. On opening the head, a clot as large as a hazel-nut was found in the grey matter of the superior and posterior portion of the right cerebral hemisphere. As there was no contusion over the site of this clot, it was conjectured that it might have resulted from *contre-coup* of the violence which broke the angle of the jaw on the opposite side. I examined the seat of the former hernia, and of the operation by which it had been cured, most carefully, and the result was most satisfactory; for it was clearly proved that the cure had been radical and complete. On the integument of the abdominal wall, just over the internal ring, there was a small, slightly depressed, but perfect, and quite

movable cicatrix. This indicated the point where the needle had emerged and the ligatures had been tied. There was a similar cicatrix on the scrotum, indicating the spot at which the invagination had been formed and the needle entered. It is to be noted particularly that no trace of the invagination remained. On reflecting the integument, there was some slight adhesion and thickening of the areolar tissue and fascia where the needle had passed. The two layers of fascia covering the inguinal canal were found to be strong and well developed, and slightly thickened at this point. The aponeurosis of the external oblique was then examined. The external abdominal ring was tolerably well defined; the cord was covered by a strongly developed intercolumnar fascia and cremaster, with the blending of the remains of the hernial sac; the cord and testicle were perfectly healthy; the margins of the external abdominal ring were perhaps not quite so clearly defined as in the natural state, but there was not much change. On slitting up the inguinal canal from towards the point of the hip, the tendon was found to be adherent to the internal oblique at a point corresponding to the track of the needle; the lower margin of the internal oblique and transversalis muscles were universally adherent to Poupart's ligament, and the cord seemed rather to pass through than under them; the connexions of the cremaster with these muscles appeared more distinct than usual. On turning down the abdominal wall to examine the internal ring from the inside, the usual depression was observed well marked; the peritoneum around the ring was thickened and firmly attached, sending a prolongation or infundibuliform process through it, which became blended with the cord. Doubtless this was the remains of the hernial sac. The opening was hermetically closed by firm and strong fibrinous bands of adhesion, which crossed it and became blended with the transversalis fascia. This was very strong; in short, the closure of the internal ring was so perfect that it was completely protected against the passage of anything through. The testicle and the component parts of the cord had not sustained any damage whatever; the epigastric artery was also uninjured.

Remarks.—The appearances in this case prove that it is not necessarily to the invagination that we must look for the occlusion of the peritoneal opening, but rather to changes in and about the aperture itself, or in the parts which pass through it. The internal abdominal ring in this case was found to be completely closed by organisation of inflammatory exudation, and by the consequent fusion of this with the peritoneum, transversalis fascia, and cord, into a comparatively dense tissue, which not only occluded the opening, but rendered it more firm and yielding than in the natural state. It was certainly remarkable how very little the natural rela-

tive position and appearance of the parts were otherwise altered. Not a trace of invagination remained, and beyond the complete occlusion of the internal abdominal ring, and the prolongation of the peritoneum in the form of an infundibuliform process into the inguinal, where it terminated and became blended with the tissues of the cord near the external ring, there was little or nothing to mark any difference from the natural condition of the parts. It is evident that the needle, in perforating the abdominal wall from the apex of the invagination, must have passed through, or underneath, the margin of the internal ring, and that in all probability the peritoneal sac was perforated, unless indeed the sac had been pushed aside by the invagination of adhesions which have so effectually shut up the ring as to render a recurrence of hernia well nigh impossible. The history of the poor fellow's case proves that this was really the fact, for he was exposed to all possible causes that might have brought back the hernia had the cure not been completely accomplished. He lived a life of uninterrupted debauchery, and exposed to all kinds of physical privation. He wore no truss, though provided with one on leaving the Hospital. He fell from a house, and neither the muscular exertion consequent upon this, nor his struggles during intoxication, and the subsequent suffering he underwent for the reduction of the dislocation of the head of the femur, sufficed to cause a recurrence of the hernia. I observed on his re-admission that though he rolled about and struggled much in bed, there was not the slightest tendency to a return of the hernia; and when he recovered from the intoxication his constant request was that I would cure him of this accident as thoroughly as I had done of the hernia. It is evident from this case that an essential condition of success is to invaginate the portion of scrotum so effectually that when the needle perforates the abdominal wall it shall pass close to, if not through, the internal abdominal ring. As noted in the examination after death, the internal epigastric artery seemed to have escaped, notwithstanding the proximity of the needle to it; and I think that even if it had been wounded there would not have been much additional danger, as the immediate tightening of the ligature would have the effect of preventing hæmorrhage. I have already, in the *Medical Times and Gazette* (p. 193, August 49, 1865), described the operation and the instruments with which I perform it.

Calcutta.

RECOVERY FROM TRAUMATIC TETANUS.

Clinic of Prof. Gross, Philadelphia.

Wm. H., æt. 21. This case is an extraordinary one. Prof. Gross saw him in consultation six weeks ago. Two weeks prior, the patient

had had the misfortune to break his little finger, between the tongue of a hose carriage and the wall of a house. An attempt was made at conservative surgery. At the expiration of a fortnight symptoms of tetanus supervened. When Prof. Gross saw him several days after, he found him with a wedge between his teeth, to prevent injury to the tongue, and enable him to swallow such food and medicine as were ordered. His head was thrown back, and he was an object of great suffering and commiseration. He could not lie down at all, day or night, for two weeks; at the very moment his head touched the pillow he was thrown into violent spasms. He had little or no appetite, and considerable thirst. Prof. Gross saw him in consultation every other day for a while, and at last twice a week for upwards of a fortnight. Finding that the finger was a source of great suffering, it was removed at the second visit, and the whole limb wrapped up in a strong solution of sugar of lead and opium, under the influence of which, and constitutional means, the inflammation rapidly subsided, the swelling and pain disappeared, and the limb became comparatively comfortable. Internally, he took one-half a grain of morphia, some three or four times in the twenty-four hours, along with quinia, the tincture of the chloride of iron, and nutritious food, in the form of beef essence, together with an abundance of milk punch. Gradually, the tetanic symptoms subsided, and ultimately, they entirely disappeared. He has now been perfectly free from them for three weeks next Saturday. He has improved in flesh, sleeps well, and has a good appetite.

Traumatic tetanus is usually fatal at a period varying from a few days to several weeks. Only two other cases have been seen to recover by Prof. Gross. One was that of a man in Kentucky, who had the misfortune of injuring one of his fingers. After the symptoms of tetanus supervened, Prof. Gross was called to see the patient. Amputation was performed, and he was put on local and constitutional treatment, of a character similar to that of the case just referred to; and although the symptoms lasted for a week longer, yet the man got entirely well. The other case occurred in a little child, living a few miles back from Louisville, who, in falling from a fence received a punctured wound, by coming in contact with a splinter, which entered the face below the eye. Symptoms of tetanus soon after made their appearance. When Prof. Gross was called to the patient, they had been in progress a number of weeks. An excision was made, the splinter extracted, and the child made an excellent recovery.—*Philadelphia Med. and Surg. Reporter.*

Midwifery and Diseases of Women and Children.

OVARIOTOMY: PEDICLE SECURED BY SILVER WIRE AFTER THE FAILURE OF THE ACTUAL CAUTERY TO ARREST THE HÆMORRHAGE.

By J. Marion Sims, M.D., Knight of the Legion of Honour, Physician to the Women's Hospital, New York, Honorary Fellow of the Obstetrical Society of London, &c.

Mrs. D., aged 52, an American lady, residing at Paris, the mother of six children, had always enjoyed good health till the spring of 1865, when she had occasional attacks of nausea and vomiting, which she thought might be due to change of life, as menstruation then began to be irregular. The nausea continued in spite of remedies; and she consulted Dr. Arnal about twelve months ago, who diagnosed an ovarian tumour on the right side. In February last, she consulted Dr. Trousseau. In March, she sent for Dr. Beylard, her regular medical attendant, who again called Dr. Trousseau in consultation. From this time the abdomen grew rapidly larger. In May and in August, she saw Dr. Velpeau in consultation with Dr. Beylard. The tumour was then very large. She vomited almost all her food, and was emaciating very rapidly.

Dr. Beylard asked me to see her on November 9th. She measured fifty-three inches around the abdomen, and twenty-three inches from the ensiform cartilage to the pubes. I diagnosed a multilocular ovarian cyst, probably without adhesions, and advised its extirpation as the only hope of a cure.

The operation was performed on Sunday, Nov. 18th, at the Hôtel du Pavillon de Henri IV. at St. Germain. I was assisted by Drs. Beylard, Johnston, Darby, Buckler, Lailler, and Thierry-Meig. Dr. Beylard administered ether. An incision, three inches long, was made in the usual way through the abdominal walls, and the cyst was exposed. The trocar was introduced, and emptied one of its largest compartments of about ten pounds of a dark brown serous fluid. Five other compartments of the cyst were in turn punctured; but in two of them the fluid was too thick to flow through the tube of the trocar. The other three gave vent to about twenty pounds more fluid. To expedite the operation, the external incision was enlarged to the extent of five inches, which allowed me to extract the remainder of the tumour *en masse*. It was attached to the right broad ligament. The pedicle was short and broad. When spread out in the clamp, it measured four and a half inches in width. Its veins were large and tortuous. It was severed by the actual cautery, according to the plan of Mr. Baker Brown.

On removing the clamp, blood began to ooze from the end of the line of cauterisation farthest from the fundus uteri. The bleeding seemed to be chiefly from the open mouths of the large veins. An inch of tissue, including the veins, was encircled in a loop of silver wire, which was drawn tightly, twisted firmly, and cut off close to the twist. The mere mechanical manipulations of doing this unfortunately tore open the whole extent of the line of cauterisation, and blood oozed out from every part of it. To secure this long line (nearly four inches) of bleeding surface, it was necessary to introduce five other loops of silver wire, embracing as many segments of the bleeding pedicle, each of which was twisted separately and cut off close, as before described. The uterine artery spouted furiously, and required a special ligature. After the bleeding was wholly controlled, the pelvic and abdominal cavities were thoroughly cleared of the fluid that unavoidably emerged into them, and the external incision was closed by a continuous suture of silver wire. The whole of the peritoneal membrane, whether lining the walls of the abdomen or investing the intestines, was deeply congested, and had a red granular appearance. The tumour had no adhesions; and, notwithstanding the appearance of the peritoneum, there was no unusual amount of serum in its cavity. She was fully under the influence of ether only during the early period of the operation, and recovered easily from its immediate effects. Reaction was established in two hours with a pulse at 108, which at midnight fell to 96. She vomited only twice during the afternoon, and was wholly free from pain or suffering of any kind.

About two hours after the operation, the urine (fourteen ounces) was drawn off by the catheter; but after this she passed urine spontaneously and freely. The bowels were moved spontaneously on the third day. She slept every night without anodynes; and took nourishment with a relish from the first day.

There was nothing whatever worthy of remark during the convalescence. The external wound healed perfectly by the first intention. The silver sutures were removed on the tenth day after the operation. She sat up and walked across the room on the eleventh day, and on the twenty-second day she returned to her house in Paris perfectly well.

The solid part of the tumour removed *en masse* weighed eleven pounds, and the fluid thirty-two pounds. Dr. Johnson and others present estimated the loss of fluid during the operation at eight or ten pounds. The whole amount was probably near fifty-pounds.

In one of the cysts the fluid was straw-coloured, in another coffee-coloured, and in one it was as dark as sugar-house molasses; in others it was of the consistence of jelly.

The operation of removing the tumour lasted twenty minutes, and the time taken in securing the pedicle was about twenty minutes more.

Ever since the first introduction of the use of silver sutures in 1849, I have advocated the application of the metallic ligatures to the pedicle in ovariotomy. In 1858, this view was held forth in my paper, "Our Silver Sutures in Surgery." Since then, I have carried it out in practice.

Dr. Nélaton performed the operation of ovariotomy in Paris in May, 1864, on a patient of Sir Joseph Olliffe, and kindly allowed me to secure the pedicle with silver wire. It was transfixed by a double wire, which was cut in two, and each half was twisted tightly on opposite sides of the pedicle. This was then cut off near the ligatures and returned into the cavity of the abdomen, and the external wound was closed by silver sutures. Unfortunately for the poor patient, she died on the fifth day after the operation, of blood-poisoning from peritoneal exudation. But, fortunately for science, a *post mortem* examination showed the metallic ligatures entirely embedded in the tissue of the pedicle, and so perfectly sacculated that I was obliged to cut into its structure to find them.

The wire had cut into the tissue, and this had healed behind its track, and thus it was wholly covered up and hidden from view. I was able to foretell what would be its method of action by observation from analogy. In 1850, by means of a silver wire, I made the effort to strangulate a warty excrescence on the cheek of a lady sixty years old. It was of about the size of the end of the little finger, and projected at least half an inch above the surface. It was hard to the touch, and of a reddish tint. On tightening the wire at its base, the top became of a deep purple colour, showing that its circulation was momentarily arrested. On visiting my patient the next day, I was surprised to find the excrescence of its original colour, without the least sign of a disorganising process. On the contrary, its circulation was going on as vigorously as before the application of the wire. On a minute examination, I found that the wire had cut a bed for itself entirely around the structure embraced, and that the tissue so cut had overlapped the wire and healed over it, thus encasing or sacculating it completely, and this within the short space of twenty hours. Of course, it was a mistake to apply the wire at all with the idea of producing a slough, and it was clipped and drawn out.

Notwithstanding this lesson, I made the mistake again of applying a silver wire to a hæmorrhoidal tumour with the expectation of strangulating it. The strangulation was only momentary; for, two days after the operation, I found the hæmorrhoid presenting almost the identical ap-

pearance that it did before the operation, while the wire was partially embedded in its structure and securely held there by a circulating process such as that described in the case above. The experience gained by these two experiments gave me the idea of applying the wire to the pedicle in ovariotomy, and of explaining its probable action; while the fact observed in the case of M. Nélaton and Sir Joseph Olliffe demonstrated the truth of what was so naturally inferred.

It was a great improvement in the operation of ovariotomy, when, a short time ago, the pedicle was drawn out and secured by a clamp externally to the abdomen, instead of being tied with a cord, as formerly, which was then allowed to hang from the lower end of the external wound, thus acting the part of a seton and exciting the action which it should have been our object to prevent. But I think a still greater advance is made, when we can secure the bleeding pedicle in such a way as safely to replace it within the abdominal cavity, and thus allow the external wound to be healed throughout its entire length by the first intention.

For this desirable end we now have two methods: the one of treating the pedicle by the actual cautery, so successfully practiced by Mr. Baker Brown; the other by means of the metallic ligature.

The actual cautery does not always succeed; and the case above described clearly proves that we have a safe and sure resource in the silver ligature.

At a recent discussion at the Obstetrical Society in London, the fact was elicited that the actual cautery failed to arrest the hæmorrhage in one-fouth of the cases operated upon by this method by Mr. Harper. It is well to know this, and to be prepared for such a contingency.

In Mr. Baker Brown's last thirty-nine operations he has used the actual cautery, and has lost but five cases.

I am well satisfied that the actual cautery and the metallic ligature are at present our safest means of securing the pedicle in ovariotomy.

No surgeon can expect to perform this operation successfully who is in the constant habit of making dissections or *post mortem* examinations, or dressing erysipelatous or other poisonous wounds. And it is quite as essential that each of his assistants, even the meanest sponge-washer, should be as clear of all contaminating influences. Mr. Spencer Wells, M. Maisonneuve, and others, have observed that very many deaths after this operation are due to blood-poisoning, as a consequence of a sero-sanguineous exudation into the cavity of the peritoneum. When this is the case, the proper course is to puncture the peritoneal cavity through the posterior vaginal *cul-de-sac*, evacuate its contents, and keep it drained

and even washed out. This idea and operation are due to my distinguished countryman, Dr. Peaslee; and I believe it has been carried into practice also by Mr. Spencer Wells.—*British Medical Journal.*

CASE OF OBSTINATE VOMITING, CONNECTED WITH THE PRESENCE OF A FOREIGN BODY IN THE UTERUS.

By James Blake, M.D., Professor of Obstetrics and Diseases of Women and Children in Toland Medical College, San Francisco.

Dec. 18.—Was called to see Miss C., æt. 22, at 1 A.M. When I arrived, I found she had been suffering from constant vomiting for the last three days, for which she had been treated homœopathically, with the usual result; nothing was retained on the stomach, not even a drop of water or ice. There had been no sleep for the last three nights; in fact, the efforts to vomit never remitted for more than five minutes; nothing, however was brought up except a little water or mucus. Expression of countenance haggard; tongue clean; skin cool; pulse 80, soft and weak; no pain except that caused by vomiting. I learned that the lady had been in ill health for several months, and that she had been treated for uterine disease. Ordered external application of turpentine over the pit of the stomach; chloroform, gtt. vj.; morph. sulph., gr. $\frac{1}{4}$; to be repeated every hour until the vomiting ceased.

10 A. M.—The first dose of the medicine quieted her, and she slept for a short time. A second dose was given at the end of the first hour, although there was no vomiting, and a third dose an hour afterward. This was rejected, and since then the vomiting has been as bad as ever. Ordered oxalate cerium, gr. iij., every hour. The mixture with chloroform and morphine to be repeated after four hours. As the bowels had not been moved for three days, I ordered an enema with castor oil and turpentine, to be followed, after its action, by one containing half a drachm of laudanum.

4½ P. M.—Much the same—patient getting weaker. As I was convinced that the vomiting was uterine, and the condition of the patient was such as to cause anxiety, I took an opportunity of inquiring as to the possibility of pregnancy existing, explaining my reasons for so doing This was indignantly denied. I ordered brandy and soda water; enema with laudanum to be repeated.

19th.—Symptoms still the same; the laudanum enema had procured hardly any sleep; everything is rejected a few minutes after it is swallowed; patient getting weaker, having retained no food or even water on

the stomach for the last four days, during the whole of which time there has not been more than a few minutes sleep. I learned to-day that the vomiting had come on after she had had something done to the womb, which caused her much pain, and that the surgeon had introduced the speculum after he had once withdrawn it, in order, as he stated, to remove a piece of cotton he had left in the womb. Thinking that the vomiting was kept up by the presence of a foreign body, I made a digital examination to see if I could discover it. I found the neck of the uterus enlarged and inflamed, the orifice patulous, and the body retroverted and flexed; could feel no foreign body. As it was time for menstruation to come on, I did not wash out the uterus as I otherwise should have done.

20th.—Rather better; had slept about an hour, and vomiting not so constant when lying quite still, but the slightest movement or attempt to speak, or opening of a door, or even being spoken to, brings on vomiting. Pulse 78, weak; skin cool; nothing remarkable on the stomach. I ordered champagne and brandy; carbonate of bismuth.

21st.—Better; slept some two hours during the night. Can take raw brandy, although water she immediately vomits. States that when she feels the vomiting coming on, a tea-spoonful of raw brandy will check it. During the night there was a remission of the vomiting for three or four hours. Is better when lying on her right side; if she turns on her back, vomiting immediately comes on. Is now so weak that her voice is hardly audible. Ordered enemata of brandy and yolk of eggs. Menstruation came on last evening; had sharp, cutting pains at commencement, but was too weak to notice if any thing came away in the discharge, which is moderate.

For the next forty-eight hours the patient was kept alive by brandy and champagne, and nutritive enemata. It was not until the 24th that any food was retained on the stomach. At this time she was much prostrated, having been eight days without any food, during the greater part of the time with constant vomiting and loss of sleep. The pulse was 85, small and weak; skin hot and dry—probably from the stimulants.

From this time the patient gradually recovered, although it was three weeks before she had gained sufficient strength to leave her room. Menstruation lasted the usual time, but rather scanty. On making an examination per vaginam, about three weeks after menstruation had ceased, I found a piece of cotton in the vagina, such as used for applying caustic to the interior of the cervex: and I have no doubt but that this, whilst remaining in the uterus, had been the cause of the vomiting.

The above case affords a most striking example of the effect of mechan-

ical irritation of the uterus in producing vomiting, and would tend to show that where pregnancy acts as a cause of vomiting, the vomiting is owing to the mechanical irritation by the fœtus, and not to the changes in the uterine system accompanying pregnancy.

The purely reflex nature of the vomiting in this case is interestingly shown by the causes that would give rise to it: the slightest movement, the opening of a door, even speaking to the patient, would bring on an act of vomiting, just as the same causes would give rise to spasm in teta nus or in poisoning by strychnine.—*Pacific (Cal.) Med. and Surg. Journal.*

REMARKABLE CASE OF DELIVERY OF REMAINS OF FŒTUS PER ANUM

By John Lewis, M.D., of King William County, Virginia.

On the morning of the 19th of April, 1864, I was called to see a negro woman, between thirty-five and forty years old, said to be labouring under chronic dysentery. I found her feeble, very much emaciated, and confined to the bed. Upon enquiring into the history of the case, all the information elicited was, that she had been suffering, for several months, with chronic disease of the bowels, attended with frequent discharges of mucous, mixed with blood and purulent matter, with other symptoms, characterizing disease of the large intestines.

Of the previous treatment of the case, they were ignorant, and as the physician, who had formerly charge of it, had left the neighbourhood, I had no means of knowing. Suffice it to say, from the facts before me, I looked upon it, as a case of chronic disease of the large intestines. I directed milk toddy, made with brandy, and gave her some gentle astringent and anodyne. On the 21st ordered a small dose of ol. Ric. guarded by an anodyne.

On the 22nd I was called in great haste to see her. The oil had acted partially, and the rectum was nearly occluded by some substance. Upon introducing the finger, I detected a small piece of carious bone; this I believed to be the coccyx of the woman, in a necrosed condition, and removed it with some difficulty. Further examination detected a mass of bones wedged in the rectum. Introducing two fingers of the left hand, into the rectum, and separating the parts, by distending the sphincter as much as possible, (which fortunately, was considerably relaxed, and seemed to adapt itself to the circumstances of the case) at the same time, with a delicate pair of forceps, in the right hand, I extracted, what I immediately recognised as the parietal bone of a fœtus, and continued to extract a second parietal, the frontis, the occiput, the clavicles, humerus, femurs, &c., until the greater part of the most compact and hardest

bones of the skeleton were removed. This process was facilitated by injecting water up the rectum.

After this operation, for the first time, the woman told me she thought she had been pregnant the year before, and all symptoms had subsided, without giving birth to a child. The woman was thirty-five or forty years old; had given birth to five children before, with as little inconvenience as most mothers.

In 1863, she thought she was pregnant, and gestation advanced as usual; nothing to distinguish it from her other pregnancies. September was the ninth month; during that month she was taken with rigor, a small discharge from the vagina, pains resembling labour pains, though not as severe as usual. This condition lasted for several days, and then all the symptoms subsided, the abdominal enlargement gradually disappeared, and her health was bad. Dysentery came on about two months before I saw her the first time.

After the removal of the bones she recovered rapidly, and by the 28th of April I discharged her as entirely convalescent.

The first piece of bone extracted, I thought was a portion of the coccyx of the mother, as it seemed to be attached. The other bones, before seeing them, I thought had been swallowed without mastication. I thought the bones indicated full development of the fœtus, from their size and compactness. The mother told me she thought she felt the motions of the child, as in ordinary pregnancy. I carefully preserved the bones, intending to exhibit them, and also to publish the case, but my house was visited by the raiders, and the bones, like many other articles of my property, were wantonly destroyed.

The woman, now nearly two years from the occurrence, enjoys good health; has menstruated regularly since her recovery, but has not been again pregnant. She did not menstruate from the time of her supposed pregnancy, or during it, until after the removal of the remains of the fœtus.

After extracting the bones, I endeavoured to examine the rectum, in order to ascertain if there was a communication with the vagina or any other organ, without finding one, nor was there, at any time, fœcal matter voided through the vagina.

My opinion is, that it was a case of extra-uterine pregnancy; it progressed to maturity, the fœtus being enclosed in a sack extemporised for the occasion; delivery being impossible, per vias naturales, the fœtus died; the soft parts were absorbed, leaving the bones of the fœtus; adhesion took place betwen the sac and the colon or rectum, and finally, by sloughing of the parts, an opening was made, and the bones made their exit per anum.

Canada Medical Journal.

MONTREAL, FEBRUARY, 1867.

VACCINATION.

In our January number we published the report of the Public Vaccinators of the city of Montreal for the year 1866—a document worthy of serious consideration by the Health Committee of the City Council. We fear, however, that it will meet the fate which has befallen every report from the same quarter, viz: referred to the Health Committee, and never heard of more. It is a singular fact that the public loudly clamor for the adoption of sanitary measures upon the apparent approach of an epidemic, yet cannot be roused into action; but with folded hands, calmly looks on and sees yearly hundreds and hundreds consigned to their graves, who might have been spared, and been useful members of society. It is hard for the public to understand that many diseases are preventable; that many diseases that now weekly appear on the mortality sheet might be all but totally obliterated, if a thorough measure of sanitary reform was faithfully put into action. It is, however, especially with reference to small-pox that we would now write. No disease is more preventable, and none the means of preventing which are more easy. Vaccination has saved lives unnumbered, and yet the public look upon it with indifference, and our authorities take but little interest, even when told that in three years the mortality from the disease has been diminished from several hundreds yearly to half a hundred, this reduction being beyond a doubt due to the efforts of the medical men who hold the office of Public Vaccinators. The Vaccination Act, under which they were appointed, was passed in 1861; and instead of being made applicable to the entire Province, was made to embrace only the chief cities. This was, we think, a mistake, for we are satisfied that in the country, as a rule, less attention is paid to vaccination than in the city. Owing to the scattered character of country practice, it is difficult to keep up the supply of vaccine, and

when a demand is made on the city to supply the virus, owing to the appearance of the disease, often it is impossible to do so, and before the unvaccinated can be protected, it has gained a foothold, from which it only can be dislodged by a rigid system of vaccination and re-vaccination. Were the Act applicable to the country, the greatest benefits would result; but we can never expect the full benefits of the Act till an example is made of a few of those who, from sheer neglect, leave their children unvaccinated till they attain the age of several years. A clause which we would wish to see inserted in the Act, and we commend it to the attention of the Public Vaccinators of this city, is, that every child, on making application for admission into a school, whether public or private, should be examined as to whether it is thoroughly protected. If vaccinated before, and the cicatrice not be a good one, it should be again vaccinated, and if not previously done, should be subjected to the action of the virus. It was asserted by Jenner, and we believe the assertion is a true one, that when vaccination is properly performed, it gives the person a protection equal to what he would have against a second attack of the disease. A greater protection than this it is perhaps impossible to have, and it is certainly amazing that so many allow so many years to pass over the head of their children without having them vaccinated. Last year, in anticipation of a visitation from cholera, the public of this Province were aroused to use the most vigilant sanitary measures to prevent its approach, and we are thankful that we escaped the visitation; but thousands are annually sacrificed in Canada from small pox, with the power to prevent it in our hands, yet without a single public effort to prevent it. Unfortunately we meet with some, even in our own profession, who doubt the efficacy of vaccination. For their information, we copy the following table from a recent article in the *British Medical Journal*:

Periods compared.	Annual deaths by small pox in England & Wales.	Annual rate per million of population.
1. Average of 30 years previous to introduction of vaccination	——	3000
2. Average of 3 years (1838-40), when vaccination became established, but before it was gratuitous	11,944	770
3. Average of 9 years (1841-53), when vaccination was gratuitous, but not obligatory	5,221	304
4. Average of 10 years (1854-63), when vaccination has been to a certain extent obligatory	3,351	171

We cordially second the request that the Public Vaccinators make for an addition of twenty-five cents to the twenty-five they already

receive for each successful vaccination. We are well aware that the law only allows the latter amount; but when they have been as successful as their report indicates, and when the Council consider the trouble a proper performance of their duties give them, they must admit that the request they make is a reasonable one. Perhaps the suggestion made by the Montreal *Gazette* to pay each fifty pounds a year is as good a way as any of acceding to the request the Vaccinators make. We are not aware whether the other cities named in the Vaccination Act have put it into operation. If they have, we will be glad to learn with what results; if they have not, we feel they deserve severe censure, and call upon the profession in these localities to insist upon its enforcement.

DEATH FROM CHLOROFORM.

We notice a fatal case of chloroform inhalation which occurred at Bellevue Hospital, on the 4th February last, the operator Frank H. Hamilton, M.D., Professor of Surgery at the medical school of the hospital. It appears that a woman who had lost her nose, and who had undergone a rhinoplastic operation, a month previously, was again submitted to the knife for the purpose of dividing the pedicle, the new nose having been as usual taken from the forehead. On the former occasion she had taken chloroform without any ill effects. The following extract is from the "New York *Times*" of February 7th. It is the evidence of the house surgeon and his senior assistant given at the inquest.

David M. Cory, M.D., testified: I am House Surgeon of the Third Surgical Division of Bellevue Hospital; I saw the deceased a few minutes after she was admitted, and she stated to me that her nose had been bitten off by a negro down town; I examined the wound, and found that the cartilages had been completely severed from the nose; on the 7th of January Dr. Hamilton performed an operation on her for the purpose of making a new nose. At deceased's own request she was placed under the influence of chloroform, and kept under it during the operation, which lasted about half an hour; on the 4th of February, the deceased was again taken to the amphitheatre and placed on the operating table for a second operation. By deceased's own permission *about half an ounce of chloroform* was poured upon a *folded towel, and held by* Dr. Walker about two inches from her mouth; a *second application* of chloroform was made in the same manner, lasting altogether about ten minutes, when deceased suddenly ceased to breathe; efforts were immediately made by artificial respiration, and cold water dashed upon the deceased to restore her; during these efforts several long inspirations took place; every measure was adopted that was necessary to restore her, but without any

favourable results; the deceased died in about sixteen or eighteen minutes after the chloroform was first administered; the chloroform was very judiciously administered, and was manufactured at the United States Army Laboratory, in Philadelphia, 1863; the ether was manufactured by Edward R. Smith, of Brooklyn. I was present at the *post mortem* examination; I didn't see any lesion that would be sufficient to cause death; in my opinion death was caused by the inhalation of chloroform; I am a graduate of the College of Physicians and Surgeons, and have been on duty at Bellevue Hospital as Surgeon and Assistant Surgeon for about ten months; I have administered chloroform thirty-five or forty times with no bad effects.

Henry F. Walker, M.D., testified: I am senior Assistant Surgeon at Bellevue Hospital; I graduated in March, 1866, and have been on duty at the hospital since April last; I have given chloroform as many as twelve or fifteen times, and ether about six times, without any unfavourable results; I administered the chloroform to deceased the second time, and with a great deal of care; I gave her about one drachm of the chloroform first, but the patient did not come under the influence of it; I then gave her ether for about two or three minutes; she did not come under the influence of that, and I was directed to replace it with chloroform; Dr. Cory poured *about half an ounce of chloroform on a folded towel*, and held it about two inches from her mouth; about *the same* amount was poured on the *towel a second time*, and she then came under the influence of it; the chloroform was then replaced by ether, and administered in the usual way. After these had been administered for one or two minutes, the patient stopped breathing suddenly, and efforts at artificial respiration were resorted to to restore her, and continued for three quarters of an hour. I was present at the *post mortem* examination, and examined the organs after they had been removed, and saw no lesions sufficient to cause death; in my opinion death was the result of the inhalation of chloroform.

We cannot but take exception to this method of administering chloroform, and must say, that if this is the rule adopted in the administration of the anesthetic in this institution, the wonder is that these fatal cases are so few. In our own Hospital in Montreal, we have had one or two fatal cases from chloroform inhalation, but every precaution is taken; the liquid when used carefully measured, and only one drachm used at a time. This is poured into a starched towel folded in the shape of a funnel with an opening at the small end of fully 2½ inches diameter, so that the patient obtains a full and free supply of air mixed with the chloroform vapour. This takes up a little more time, but is far more safe.

We have received the following notification, or summons, of the American Medical Association, and publish it for the benefit of our readers. We regret exceedingly that we will not be able to attend this interesting meeting. We notice in the list of delegates the omission of the name of the delegate appointed to represent the College of Physicians and Surgeons of Lower Canada, Dr. William Marsden, of Quebec. This omission is due to the fact (we presume) of the Secretary of the College having failed to forward the name of their delegate. The request is made, as may be observed, by Dr. Atkinson, Secretary to the Association, that the names of delegates elected to represent medical organizations be forwarded without delay to the Permanent Secretary. We trust that our worthy Secretary of the College will comply with this request without further delay, as Dr. Marsden was elected their representative in October last:—

"The eighteenth Annual Meeting of the American Medical Association will be held in Cincinnati, on Tuesday, May 7th, 1867, at 11 o'clock A.M.

"The following committees are expected to report:—On Quarantine, Dr. Wilson Jewell, Pa., chairman; on Ligature of Subclavian Artery, Dr. Willard Parker, N.Y., chairman; on Progress of Medical Science, Dr. Jerome C. Smith, N.Y., chairman; on the Comparative Value of Life in City and Country, Dr. Edward Jarvis, Mass., chairman; on Drainage and Sewerage of Cities, &c., Dr. Wilson Jewell, Pa., chairman; on the use of Plaster of Paris in Surgery, Dr. Jas. L. Little, N.Y., chairman; on Prize Essays, Dr. F. Donaldson, Md., chairman; on Medical Education, Dr. S. D. Gross, Pa., chairman; on Medical Literature, Dr. A. C. Post, N,Y., chairman; on Instruction in Medical Colleges Dr. Nathan S. Davis, Ill., chairman; on the Rank of Medical Men in the Army, Dr. D. H. Storer, Mass., chairman; on Rank of the Medical Men in the Navy, Dr. W. M. Wood, U. S. N., chairman; on Insanity, Dr Isaac Ray, R. I., chairman; on American Medical Necrology, Dr. C. C. Cox, Md., chairman; on the Causes of Epidemics, Dr. Thomas Antisell, D. C., chairman; on Compulsory Vaccination, Dr. A. N. Bell, N.Y., chairman; on Leakage of Gas-Pipes, Dr. J. C. Draper, N.Y., chairman; on Alcohol and its Relations to Man, Dr. J. R. W. Dunbar, Md., chairman; on the Various Surgical Operations for the Relief of Defective Vision, Dr. M. A. Pallen, Mo., chairman; on Local Anæsthesia, Dr. E. Krackowitzer, N. Y., chairman; on the Influence upon Vision of the Abnormal Conditions of the Muscular Apparatus of the Eye, Dr. H. D. Noyes, N.Y., chairman; on the Comparative Merits of the Different Operations for the Extraction of Vesical Calculi, Dr. B. J. Raphael, N.Y.,

chairman; on the Therapeutics of Inhalation, Dr. J. Solis Cohen, Pa., chairman; on the Deleterious Articles used in Dentistry, Dr. Augustus Mason, Mass., chairman; on Medical Ethics, Dr. Worthington Hooker, Conn., chairman; on the Climatology and Epidemics of Maine, Dr. J. C. Weston—of New Hampshire, Dr. P. A. Stackpole—of Vermont, Dr. Hy. Janes—of Massachusetts, Dr. Alfred C. Garratt—of Rhode Island, Dr. C. W. Parsons—of Connecticut, Dr. B. H. Catlin—of New York, Dr. E. M. Chapman—of New Jersey, Dr. Ezra M. Hunt—of Pennsylvania, Dr. D. F. Condie—of Delaware, Dr. — Wood—of Maryland, Dr. O. S. Mahon—of Georgia, Dr. Juriah Harris—of Missouri, Dr. Geo. Engleman—of Alabama, Dr. R. Miller—of Texas, Dr. Greensville Dowell—of Illinois, Dr. R. C. Hamil—of Indiana, Dr. J. F. Hibbard—of District of Columbia, Dr. T. Antisell—of Iowa, Dr. J. W. H. Baker—of Michigan, Dr. Abm. Sager—of Ohio, Dr. J. W. Russell.

"Secretaries of all medical organizations are requested to forward lists of their delegates, as soon as elected, to the Permanent Secretary.

W. B. Atkinson, M.D.,
215 Spruce Street,
Philadelphia."

THE NEW BRITISH PHARMACOPOEIA.

The Dublin *Medical Press* of the 6th of February state that the new edition of the "British Pharmacopoeia" will be issued sometime in March, and it believes that the alterations that have been made will be found satisfactory. It says: "The objectionable plan of indicating the presence of opium in the names of many of the compounds has been altered, and the Dover's powder, paregoric elixir, opium pill, and other preparations containing opium, are again called pulvis ipec. co., tr. camph. co., pil. saponis co., pulv. kino co., &c." The two compounds of mercury, lately called calomel and corrosive sublimate, are now called the subchloride and perchloride of mercury. Old friends, such as the acetum scillæ, acetate of morphia, and the iodide of lead, are again introduced; while new preparations, such as the Calabar bean and the oxalate of cerium, have found a place.

We have much pleasure in stating that Messrs. Fannin & Co., of Grafton street, Dublin, have kindly consented to act as our agents for Ireland. Books for Review, addressed to us in their care, will be safely forwarded to us.

CHEMICAL AND MEDICAL NEWS.

On a New Class of Compound Ammonias. By M. A. WURTY, Academy of Sciences. December 24, 1867.

The isomerism between pseudo-amylic alcohol and ordinary amylic alcohol, which Dr. Wurty has shown to extend to the ureas, is in this note proved to extend also to the ammonias. He has here described isoamylamine. To prepare it, pseudo-amylurea is heated for some days with very concentrated caustic potash, and then distilled from baryta. The new ammonia boils at 78-5°: its density at zero is 0.755. Like amylamine, isoamylamine possesses a strong ammoniacal odour, it mixes with water, precipitates metallic oxides, and dissolves oxide of copper. The hydrochlorate crystallises in brilliant octahedra, which are efflorescent in the air. The platinous salt is very soluble in alcohol; this distinguishes it from amylamine, the platinous salt of which is insoluble. The gold salt is also soluble.

ACTION OF CHLORINE ON AMYLENE.—M. Bauer, in an article in Zeitschr. Chem., p. 380, stated that at 17° C. chlorine is absorbed by amylene without any sensible disengagement of hydrochloric acid; at the boiling point the disengagement takes place, and at the same time there are separated:—1. Chlor-amylene, C_{10} H_9 Cl., boiling from 90° to 95° C.; 2. Chloride of amylene C_{10} H_{10} Cl_2; 3. Clorinetted chloride of amylene, C_{10} H_9 Cl_3, crystallising in camphorated mases; 4. Bi-chlorinetted chloride of amylene, C_{10} H_8 Cl_4,—a heavy limpid liquid, boiling at 230° to 240° C.

Dr. Horace Green, LL.D., Member of the Medical Society of the County of New York, Fellow of the N. Y. Academy of Medicine, and up to the period of its discontinuance, President Professor Emeritus of Theory and Practice of Medicine in the N. Y. Medical College, died November 29th at Sing Sing, N. Y., aged 64 years. His name was prominently connected with the subject of the introduction of the probang into the trachea, and the injection of tubercular cavities, both of which matters gave rise to an animated discussion before the Academy.

What the late Professor Mutter did for Philadelphia, the, widow of the late Professor Valentine Mott has done for New York. At an expense of more than $30,000, she has purchased, enlarged and fitted up, at No. 58 Madison Avenue, between 27th and 28th streets, a building, in which are deposited the medical library, and the surgical instruments of her late husband, the distinguished American Surgeon, Valentine Mott.—*Medical and Surgical Reporter.*