Part Second.

REVIEWS.

De l'Évidement sous-périosté des Os. Par M. le docteur Ch. Sédillot, Médicin Inspecteur des Armées, Directeur de l'École imperiale du Service de Santé militaire, Professeur de Clinique chirurgicale à la Faculté de Médecine de Strasbourg, Commandeur de la Légion d'Honneur, Membre correspondant de l'Institut impérial de France (Académie des Sciences), Associé national de l'Académie imperiale de Médecine, etc., etc. Deuxième edition, avec planches polychromiques. Paris: J.-B. Baillière et fils: 1867: 1 vol. oct., 438 pp. [On Subperiosteal Gouging of Bone. By Dr Ch. Sédillot, etc.]

Having lately analyzed very fully in these pages the great work of M. Ollier, of Lyons, on subperiosteal resection of bone, we may...
now turn to the work of his still greater rival, which, on the same subject, divided the "grand prix de chirurgie," and has added another to the many honours gained by the illustrious Professor of Clinical Surgery at Strasbourg.

While to us, at a distance from the scene of conflict, these two great works appear to be in many respects very like each other, it is obvious that, to their authors, they appear widely different. Absolutely identical in subject, and alike approaching their subject in the same true spirit of scientific inquiry, first by experiments on animals, and then by a careful accumulation of clinical observations, very closely imitating each other in operative procedure, differing, where they do differ, more, we believe, in the principles guiding operation than in the actual operations; to us, Ollier and Sédillot appear true yoke-fellows, joint contributors to the progress of conservative Surgery. Not so does it appear to the combatants. In the eyes of Sédillot at least, differences bulk so large as to hide resemblances. He will not agree to differ. In his eyes, if he is right, and of this he has no doubt, Ollier must be wrong, and hopelessly wrong. Hear him tell us so in his forcible and able preface:—"We are able to declare that this method (évidement) is the only true and the only useful and generally applicable method of preserving limbs and avoiding amputations. We reject subperiosteal resections as illogical, inefficacious, and dangerous. . . . Our disagreement with the partizans of subperiosteal resections is thus complete. Either we are wrong, or our adversaries are wrong. Truth and error cannot face each other long in the sciences of operation; one advances, the other must retire; one is light, the other darkness; one is usefulness and success, the other danger and failure." The younger surgeon does not see the controversy in so strong a light; still it is evident that the two, united by similarity of subject, and by the verdict of the Academy, do not see that they really are pulling in the same direction.

M. Sédillot's work is a smaller and more compact one than that of M. Ollier, containing much less historical detail and comparatively few experiments on animals, but very much richer in clinical illustrations of the doctrines advanced. To a few of the more important and interesting of these we may allude after a short analysis of the earlier chapters.

In a brief introduction, M. Sédillot merely refers to the names of the earlier authors who have left their mark on this branch of surgical science, and then returns to the topic already touched on in the preface, i.e., the position which he holds in relation to subperiosteal resections. He tells that, in the first edition of this work (Paris, 1860), he protested against being thought one of the systematic opponents of subperiosteal resections, of which mode he had recognised the originality and theoretic importance. Now he has to condemn that method most absolutely, for various reasons which he briefly cites. A clever discussion of the relative value
of—1. Experiments on animals; 2. Pathological facts; and 3. Clinical experiments, based on knowledge gained from the first two, and proving or disproving them, then follows, which again leads us back to the old topic, the absolute necessity of rejecting subperiosteal resections, and of adopting "évidemment sous-périosté."

Chapter I. describes very briefly the means of treatment of the diseases of bones from the time of Celsus to the present day. It is a mere sketch, just touching on some of the chief lesions and on one or two of the principal authors; yet, here and there, a stroke of description, or the enunciation of a principle, evince the keenness of insight and the vast powers of generalization for which the distinguished surgeon of Strasburg is renowned. The section in which he brings out the bearings of the cellular theory, on such points as the absence of ossification in the periosteum at spots where there has been suppuration, the disintegration and removal of certain sequestra, and the gradual loosening of all, is very interesting in a pathological point of view. By quotations from Boyer, Sanson, Cloquet, Vidal, and Nélaton, it is then proved that évidemment is an original operation; for though the principle had once been enunciated that diseased portions of bone could and ought to be removed, the principle was forgotten and the practice abandoned.

Chapter II., on ostéogénie chirurgicale, is much longer, including nearly one hundred pages. It commences by a brief résumé of the old theories regarding reproduction and reunion of bone by means of an osseous juice, which was derived from blood, from plastic lymph, or from the soft parts, according to the various pathological views held at various dates. M. Sédillot expresses his opinion that all opposing theories are fated to disappear in a very short time before the revelations of the cellular hypothesis. "The source of ossification is to be found in the cells of the marrow, which are disseminated through the whole thickness of the osseous structure." "It is not now-a-days possible to admit that the osseous tissue reproduced after subperiosteal resections is due necessarily and always to the cellular proliferation of the flaps of periosteum, isolated and detached from the subjacent bones. This result can really occur only in those cases (very rare in man) where suppuration has been avoided."

On this question, of suppuration of the periosteal flap being incompatible with ossification, M. Sédillot insists strongly. It is his chief argument against subperiosteal resection and in favour of "évidemment." In proof of it he appeals to the numerous cases in which various surgeons have, in amputation, saved flaps of periosteum, with which they covered in the end of the bone, and all of which he says have proved unsuccessful, so far as any ossification is concerned. On this account, too, M. Sédillot recommends that splinters of bone still adherent to periosteum should be carefully saved in cases of fracture. He holds that the periosteum, if the
bone be detached, however carefully, inevitably suppurates, and is useless; while, if left attached, the bone either survives and aids in mending the fracture, or else becomes necrosed and eventually detached, without, in this latter case, destroying the life of the periosteum, which, on removal of the exfoliation, is very useful. After a few remarks on the manner in which a bone remedies loss of substance, especially if a portion of its whole thickness be removed, we have a brief statement of the indications on which M. Sédillot bases the principle of his operation of "évidement."

"The first indication is, that no part of the skeleton which still remains healthy should be sacrificed, since such a layer of bone clothed in its periosteum is the most efficacious and certain means of reproducing the whole of the bone. This is the chief support of our method of "évidement," and the chief objection against subperiosteal resections.

"The second indication is, to attempt to preserve a limb, so long as there is any chance of the preservation and restoration of the bone, notwithstanding the most extensive and severe wounds, and to learn to trust to time for the restoration of its functions.

"The third indication consists in preserving all the healthy and adherent portions of periosteum, and never detaching them from subjacent bones. The experience of ages has taught that the limbs must be maintained immobile—their length being retained so far as possible. Undue compression should be avoided, in order that free space may be left for cellular proliferation. Suppuration should be prevented, or at least put a stop to as soon as possible, a free discharge should be given to fluids, and care should be taken to preserve or re-establish the regularity of the surfaces destined to act as a mould for the new bone, so as to maintain its contour, and render it more fitted for the subsequent exercise of its functions."—P. 47.

After following up more fully in a few pages these three indications, M. Sédillot next inserts entire, or nearly so, a series of communications on the subject of osteogeny, which he had at various dates communicated to the Academy of Sciences. Some of these are very interesting, especially one on the influence of function upon structure. We have no space for either quotation or analysis. The experiments of the author on animals are then briefly detailed, and the following conclusions (among others) derived:—

"Évidement of the diaphysis and extremities, without destruction of the peripheral bony layer, and consequently without penetration of a joint, is almost invariably a successful operation."

"Longitudinal resections of the articular extremities have in most instances been followed by few accidents, with the exception of those of the knee, which were almost invariably fatal."

After this is inserted a memoir read by M. Sédillot in 1864, in which he criticizes with considerable severity the well-known experiments of Heine on the regeneration of bone by the preservation of periosteum. He takes great exception to the language in which Heine has described some of his results in the French Catalogue of the Preparations at Würzburg; To this is added a description of the preparations made by Dr Marmy on the regeneration of bone with or without preservation of the periosteum. His
experiments are very interesting, and, being more recent and less known, will repay perusal. His conclusions, as quoted here, are so far puzzling as being in many respects contradictory of the results obtained from similar experiments by M. Ollier. Thus, in opposition to the general opinion of experimenters, Dr. Marmy has obtained better results from resections of the diaphysis, in which the periosteum was removed, than in those in which it was retained. So far as we can judge from merely reading descriptions, we believe M. Ollier's experiments to be the most reliable. Marmy, however, has proved the complete success of all the "évidences sous-périostés" even when only a half or a third of the circumference of the diaphysis was retained. M. Marmy's results meet with M. Sédillot's fullest approval.

Chapter III., on subperiosteal gouging (évidement) of bone, commences with the following sentence:

"Definition.—Gouging is an operation by which we hollow out or excavate a bone for the purpose of removing diseased parts, and leave only the healthy, external, peripheral, or cortical layers immediately beneath the periosteum. The shape of the limb is thus not at all interfered with, the attachments of muscles are preserved, the periosteum remains intact, and the reproduction of bone takes place under the periosteum and in the interior of the excavated bone."

After thus defining the operation, M. Sédillot alludes to certain experiments on animals, and then discusses the history of the subject, and claims and defends his claim to priority and originality. He then comes to more practical details, and describes, in paragraphs too long to translate, the general principles of his method of operating, the requisite dressings, the manner in which nature afterwards effects repair, and some of the accidents to which the operation is liable.

Then commences, what will to many surgeons prove the most interesting part of the work, a series of upwards of 30 cases, in which évidement has been practised by M. Sédillot and his fellow workers. The results are on the whole highly satisfactory,—out of the 32 there being only 4 fatal cases, and the same number of secondary amputations. A paragraph on the advantages of "évidement" closes this most interesting and instructive chapter.

While the last chapter recorded new facts, and endeavoured to establish a new operation, the next one we come to (Chapter IV.) is devoted to a most severe and sifting examination of the recorded cases of other surgeons, and a fierce onslaught on the operations of subperiosteal and subcapsulo-periosteal resections. Though one-sided, it is full of cleverness, hits some blots, and exposes some exaggerations; but is evidently the expression of the feeling of a partizan rather than of a judge, of an impassioned combatant rather than a cool bystander. A sentence or two may be quoted from the commencement of the chapter, which will serve to show the point of view from which M. Sédillot looks at the subject:
“Whenever one endeavours to demonstrate the inanity of subperiosteal resections, one is answered by proofs that periostium can make bone. That this is the case is indisputable, and is so little disputed that we regard it as the foundation of our method of ‘évidemment,’ the design of which is to preserve the periostium in as favourable a condition as possible for repair of the bone. The true question is, not whether periostium produces bone, since every body is at one on that point since the days of Duhamel, but, whether flaps of periostium, isolated and separated from the bones below, can reproduce without danger, with success, and better than ‘évidemment,’ a true bone capable of fulfilling the functions of the one removed. It is not sufficient in Surgery for an operation merely to be successful, it ought to succeed better than another operation if it is to replace it; that is, it should give more favourable results as regards safety, rapidity, and completeness of cure. On these various grounds, we absolutely oppose subperiosteal resections.”—P. 212.

He then criticizes previous experiments on animals, chiefly those of Heine, Larghi, and Ollier, after which he comes to the clinical cases recorded by Larghi, Borelli, Ollier, and their followers and imitators. His analysis is very close and exhaustive; and many of the cases are extremely interesting in themselves, even without the caustic commentary of their terrible critic. One case by Larghi, in which considerable portions of three ribs had been removed successfully, with complete reproduction, is fully reported, and illustrates his method of operating, and the ease with which the periostium may be separated in suitable cases. He exposes the whole of the portion of bone to be removed by a longitudinal incision, then scrapes off the periostium from the anterior surface in two equal longitudinal flaps, till he is able to pass the needle of Deschamps round the bone, between it and the periostium: by it a silk thread is conveyed, with which it is easy to separate the rest of the periostium to the required length.

Dr Paravicini reports a case which illustrates too well the occasionally conflicting nature of medical evidence. It is one of subperiosteal resection of the left half of the lower jaw, which he removed entire, including the coronoid process and the condyle, from the interior of the mouth without any incision through the skin. Three weeks afterwards, the patient was cured without deformity, and with a new bone well advanced in formation. This “tour de force” naturally surprises even the dexterous Strasbourg surgeon; and in the text he expresses grave doubts as to the accuracy of the observation and as to the results. In a note, these doubts are at least strengthened by a letter from Professor Gherini, who, three years after the operation, writes: “J’ai vu l’opéré de M. Paravicini le mois dernier. Il n’y a pas un seul atome de reproduction osseuse.”—P. 280.

A detailed criticism of some cases of subperiosteal resection, by Giraldès, Aubert, Ollier, and others, prepares us for the strong expression of opinion with which M. Sédillot closes this section, “that the abandonment of the method of subperiosteal resections, as a method of regenerating bone, has become a question of humanity.” A brief notice of subcapsulo-periosteal resections, and
of osteo-plasty by displacement of periosteal flaps, in similar terms, concludes this chapter.

The fifth chapter—on general conclusions—is a short but very powerful one. In a series of short sentences, M. Sedillot reiterates his views as to the pathology of the reproduction of bone, and again insists on the merits of his own method of treatment. He begins by referring the true source of bone to cellular elements which, in unequal proportions, are to be found: 1. In the external layer of bone immediately below the periosteum; 2. In the marrow lodged in the medullary canal; 3. In the bone itself. In the first of these seats the cells are very abundant, and ossification goes on with great rapidity; hence the necessity for its most careful preservation. Tracing the changes in any given case, the earliest is the disappearance of the marrow itself, and of the remains of the old bone, leaving room for the proliferation of the cells in the neighbourhood. For this proliferation, both epiphyses and diaphysis (in évidement) form suitable moulds, to guide its growth. Then come changes in which the external layers of bone unite with the "osseous deposits" formed by and amidst the proliferating cells; the Haversian canals of each and all become continuous; the mass becomes homogenous. (These changes are very well shown in figs. 1, 2, 3.) Then, lastly, the medullary canal, which had been obliterated, is reproduced, and the bone is really regenerated in size, appearance, and function. A single sentence may be quoted here, as an example of the fresh, emphatic manner in which M. Sedillot often states a question, or propounds a generalization, so as to clear truth from the mist of words in which she is too apt to lurk, and so bring it out with clearness and point.

"It is possible, histologically, to separate diseases into two classes: those which do, and those which do not, stimulate reproduction or restoration of the affected organs. Simple inflammations, wounds, etc., belong to the first division; ulceration, caries, malignant pustule, etc., to the second. In the latter, the nisus formativus is absent or abortive, and the maladies tend to increase."

In the next few pages, "évidement" and subperiosteal resections are again compared and contrasted, with the old results.

Chapter VI., the last, consists of a collection of papers by M. Sedillot himself, and others, bearing upon the question of évidement. We have no space even to mention them, nor is it necessary. Many are mere repetitions, in other words, of what is contained in the earlier chapters. The most interesting are: A paper by Dr Eissen, on "Évidement," and one by Dr Boeckel, in which he discusses the question of subperiosteal resections of the calcaneum, and describes the results gained in his own practice and that of Professor Rigaud.

So far for an analysis of this important contribution to the Surgery of the age. With many faults, bad arrangement, frequent repetition, sometimes dogmatic, occasionally overweening, no one can read it without rising from its perusal with the conviction that the
author is a man of immense power, full of zeal for science, and deeply imbued with love for his profession. From the fire and energy of its style, and still more from the hope which the author ardently entertains, that by argument he may possibly convince opponents and win them over to his opinion, it is like the work of a man still young. But when we recall to mind that nearly forty years have passed since M. Sedillot first began to set his mark on Surgery; that this great original work is written by one who, full of years and honours, not only conducts a large private practice, but is Professor of Clinical Surgery, and Director of an Imperial Military School; we find an explanation of defective arrangement and repetitions, we no longer wonder at dogmatic ex cathedra statements, and can only admire the freshness and vigour of the man, and express a hope that he may long continue an ornament to his profession and his country.

St George's Hospital Reports. Edited by John W. Ogle, M.D., F.R.C.P., and Timothy Holmes, F.R.C.S. Vol. I. London: John Churchill and Sons: 1866.

It has long been the practice at Guy's and some of the other London hospitals, to issue annually a volume of reports, giving an account of the work done during the year; and we are glad to see that the staff at St George's have determined to do the same. This, their first volume, is in every sense worthy of the distinguished men attached to that institution, and contains some most valuable contributions to the science of Medicine and Surgery. The book is indeed most creditably got up, and reflects the greatest praise, not only on the gentlemen so well known to the profession who have undertaken the duty of editing it, but on the publishers also, who have executed their part of the work most handsomely. As explained in the preface by Dr Ogle and Mr Holmes, it is intended to continue the issue of a series of reports every year, and although the chief design of the work is to register the experience attained within the hospital, the editors, nevertheless, anticipate co-operation from former students not now resident in London.

The first article is from the pen of Dr Page, the Senior Physician to the Hospital, and forms a most appropriate opening to the volume, as it gives an interesting historical sketch of St George's Hospital and School of Medicine, with a classified list of the physicians and surgeons from its foundation in the year 1733–34. The papers which follow are chiefly of a practical nature, and some of them are accompanied by very accurately drawn and graphic illustrations. Mr Holmes contributes three articles: one, a case of Meningocele, in the occipital region, which was injected with iodine without ill consequences; one, on Amputation at the Hip-Joint, for
recurrent fibro-plastic tumour, and in morbus coxarius; and one, on Amputations, showing the influence of age on the results of amputation, and pointing out the causes of death after operation. Mr Holmes is of opinion, that in many of the worst forms of diseased hip-joint, recourse may be had to amputation with the most successful results, even where the acetabulum is extensively involved; and he mentions cases in which the operation was followed by recovery. Dr Ogle's contributions are two in number; the first being on Disease of the Brain as a result of Diabetes Mellitus; the second on the Diurnal Variations in the Temperature of the Human Body in Health. At the present time, when so much attention is being paid in most of our hospitals to the thermometry of disease, Dr Ogle's paper on the Temperature of the Body in Health is particularly interesting. Hitherto the only extensive series of experiments with which we were acquainted were those of Dr John Davy, and in most of our physiological text-books he is quoted as an authority. Dr Ogle, however, points out that Davy's calculations are quite erroneous and not to be relied on: his chief error consisting in striking his averages too low. From an extensive and most carefully conducted series of observations, Dr Ogle draws the following conclusions:

"The lowest temperature of the body occurs about daybreak. At this time a rise begins, which continues till late in the afternoon, reaching its maximum at different hours in different persons. The maximum reached, the temperature again falls. The fall is at first slow, but becomes more rapid after 9 or 10 o'clock, and this fall continues till daybreak or thereabouts, when the cycle begins again. The average variation in the course of twenty-four hours is about 1\(\frac{1}{2}\)° Fahl." His observation on the effect of alcohol is interesting. "Alcohol (or rather claret)," he says "causes an immediate rapid fall. But this effect is temporary; and a reaction ensues, by which the temperature is carried to as high a point, or even higher than it would have reached had no alcohol been taken. Tea, on the other hand, causes an elevation of temperature."

Mr Prescott Hewett furnishes an essay on the Deviations of the Base of the Skull in Chronic Hydrocephalus. Dr R. E. Thomson writes on Typhus, and Dr Allbutt on the same subject; and Mr Lockhart Clarke, whose observations are always valuable, has a paper on Progressive Locomotor Ataxy. After giving a concise but very perfect description of the symptoms of this interesting malady, he gives the history of a series of original cases illustrative of the various forms of the disease. We commend this most excellent paper to all who wish to make themselves familiar with the symptoms, the diagnosis, and the treatment of ataxy.

Dr Bence Jones writes on Jaundice and Biliousness; a subject on which the majority of medical men entertain very vague and uncertain ideas. Scarcely a day passes without bringing under the notice of the practitioner a patient who is suffering from the well-
known but imperfectly understood derangement called biliousness; yet it must be confessed that the pathology of this state has not received that attention which it deserves. Dr Jones believes that it is caused, not as is commonly supposed by the suppression or defective elimination of the constituents of the bile from the blood, but by the diffusion of bile through the walls of the gall-bladder into the blood.

“In the healthy state,” he observes, “the diffusion of bile from the gall-bladder into the blood rises from nothing to a maximum which is reached when the gall-bladder is distended to the uttermost, and the longer the gall-bladder remains distended, the greater is the amount of bile that passes into the blood.

“The gall-bladder remains long distended when for many hours no food is taken; or when no food passes out of the stomach; or when opium is taken, which stops any motion of the duodenum; or where catarrhal inflammation of the duodenum exists; then without any mechanical obstruction at the orifice of the common duct, the gall-bladder remains full of bile, and jaundice very commonly is produced. The gall-bladder is emptied when solid food or irritating medicines pass through the duodenum; and the stronger the irritant, the more completely the gall-bladder empties itself. Even violent irritation of the stomach is propagated to the duodenum and causes the escape of bile from the gall-bladder, as is seen in the action of strong emetics. It follows from these facts, that diffusion of bile may be lessened by giving frequent emetics, or by those active purgatives which act on the duodenum strongly; and to get the maximum effect, that is to reduce the diffusion to a minimum, irritants should be so given as to prevent the gall-bladder from becoming full.”

Another interesting communication, by Mr C. Hunter, on the Modus Operandi of Hypodermic Injections, discusses the question as to whether the injection should be made over the seat of pain or at a distance from it. And Mr Hunter, who has practised the hypodermic plan very largely, holds that localization of the injection to the neighbourhood of the painful nerve is neither necessary nor superior to the distant injection. Thus he has frequently, he states, cured facial neuralgia and sciatica by making the injection into the cellular tissue of the arm.

There are other papers of equal merit and interest which we cannot find space to notice, and would merely direct attention to the valuable reports of the medical and surgical cases treated at the hospital during the year, with which the volume concludes.

We congratulate St George’s and its staff on the production of such an interesting work, and hope that this, the first volume which has appeared, may be followed by a long series equally attractive and meritorious.

In conclusion, we would take the liberty of suggesting that Edinburgh should follow the example of London in the publication
of hospital reports. Surely the experience of a single year in the wards of our own Infirmary yields abundant material for the formation of such a work as we have just been noticing, and we all know how much that is worthy of being preserved and published is annually lost, or at all events never sees the light.

_Recherches sur les Alterations des Artères à la suite de la Ligature._

_Par Th. Cocteau, Docteur en Médecine, Prosecteur des Hôpitaux, Ancien Interne (lauréat) des Hôpitaux de Paris, etc., etc._

_Pp. 77. Paris: J.-B. Baillière et fils: 1867._

—[Researches on the Alterations in Arteries after Ligature. By Th. Cocteau, M.D., etc., etc.]

Without being able to boast of much original materials or many new discoveries, Dr Cocteau has, in this little brochure, given a very fair account of the changes which occur in the artery, and in the neighbourhood, after the separation of a ligature. After a very brief and bald historical notice of the literature of the subject, he discusses it in five chapters. In the first, which is very short, on the immediate results of the ligature, he mentions that M. Desormeaux has lately been using iron threads to secure the smaller arteries in amputations. The second is devoted to the subject of the coagulum, its size, and mode of formation. Dr Cocteau seems to think that, in those cases of purulent infection where, on examination, no clot is found in the usual place, its absence is caused by non-deposition, instead of the more common idea, that it has been removed by a process of re-absorption or, rather, disintegration. Chapter III. treats of the cicatrization of arteries after ligature. In Chapter IV., on the changes in the coats of the artery and in the coagulum, some interesting experiments, by Levret, on animals are quoted, to prove the well-known fact that metallic ligatures may be encysted in the tissues without exciting inflammation. The last chapter describes some of the chief accidents which may follow ligature of a vessel. Under the head of injury to the vein, two remarkable cases are quoted, in both of which the femoral vein was cut and tied during the operation of tying the femoral artery, and both of which recovered without gangrene or even œdema of the limbs. Had this little work contained a few illustrations, with references, much time might have been saved in the descriptions, and it would certainly be more useful to any one previously unacquainted with the subject.