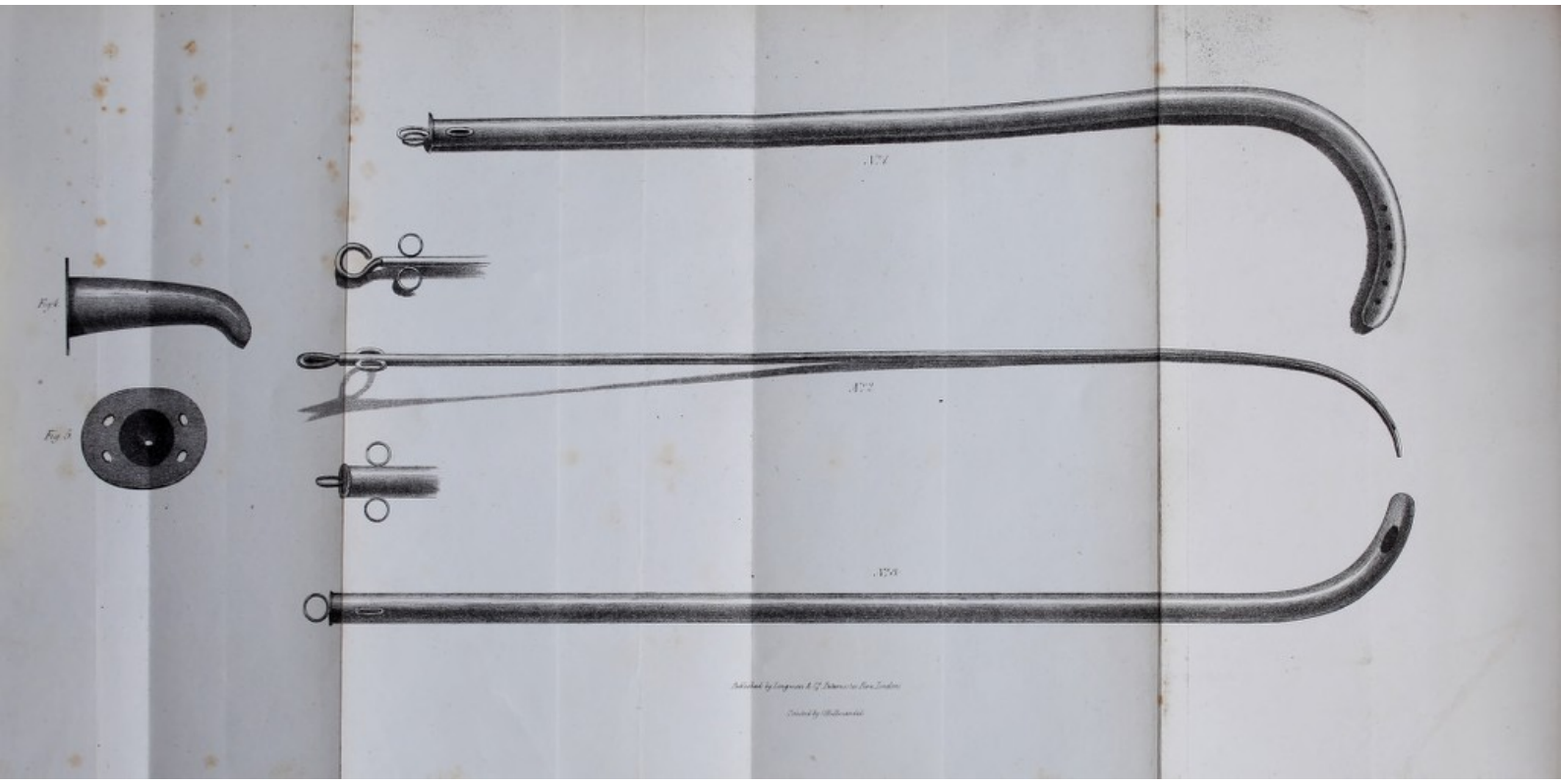
Surgical observations on the more important diseases of the mucous canals of the body : being a second edition of the author's treatise on stricture of the urethra ; to which are added, practical observations on contraction of the oeosophagus and rectum; an essay on the diagnosis of hernial and other tumours in the groin ; with remarks on tracheotomy, as connected with the treatment of chronic laryngitis / by George Macilwain.



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SURGICAL OBSERVATIONS

ON THE MORE IMPORTANT DISEASES OF THE

MUCOUS CANALS OF THE BODY:

BEING

A SECOND EDITION

OF

THE AUTHOR'S TREATISE ON

STRICTURE OF THE URETHRA.

TO WHICH ARE ADDED,

PRACTICAL OBSERVATIONS ON CONTRACTION OF

THE ŒSOPHAGUS AND RECTUM;

AN ESSAY

ON THE DIAGNOSIS

OF

HERNIAL AND OTHER TUMOURS IN THE GROIN;

WITH

REMARKS ON TRACHEOTOMY,

AS CONNECTED WITH THE TREATMENT OF CHRONIC LARYNGITIS.

BY

GEORGE MACILWAIN,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, MEMBER OF THE MEDICO-CHIRURGICAL SOCIETY, SURGEON TO THE FINSBURY DISPENSARY, AND LATE SURGEON TO THE CITY OF LONDON TRUSS SOCIETY.

Opinionum commenta delet dies, naturæ judicia confirmat.—*Cicero.*

LONDON:

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1830.

DEDICATION

TO THE FIRST EDITION

OF THE

TREATISE ON STRICTURE OF THE URETHRA.

TO

JOHN ABERNETHY, ESQ. F.R.S.

SURGEON TO ST. BARTHOLOMEW'S HOSPITAL, &c. &c. &c.

AS A SMALL TRIBUTE OF GRATITUDE
FOR HIS SUCCESSFUL ENDEAVOURS IN PROMOTING THE SCIENTIFIC
AS WELL AS THE HONOURABLE PRACTICE OF AN
ARDUOUS PROFESSION,

THIS LITTLE BOOK

IS, BY PERMISSION,
RESPECTFULLY DEDICATED,
BY HIS OBLIGED AND GRATEFUL PUPIL,

GEORGE MACILWAIN.

14, ELY PLACE,
March 4, 1824.

DEDICATION

TO

THE PRESENT VOLUME.

TO

JOHN ABERNETHY, ESQ. F.R.S.

&c. &c. &c.

My Dear Sir,

The publication of the present Volume affords me an opportunity of publicly thanking you for the kind, I had almost said, flattering manner in which you allowed me to prefix your name to the First Edition of the Treatise on Strictures of the Urethra; and of expressing a hope that it may not be rendered less acceptable to you, by the Observations on other subjects, by which it is now accompanied. I will only add my most sincere wish, that your retirement from the more active duties of the Profession may be attended with every comfort which improved health and the retrospect of a life alike honourable to yourself and useful to others, can possibly bestow; with the assurance that

I am, with great respect,

My dear Sir,

Your's, very sincerely,

GEORGE MACILWAIN.

PREFACE TO THE FIRST EDITION

OF THE TREATISE

ON STRICTURE OF THE URETHRA.

I cannot suffer this little treatise to appear before the public, without its being accompanied by a brief account of those views which led to its publication. Any surgeon acquainted with the works which have been published on Stricture of the Urethra, will perceive that the authors generally recommend one kind of treatment, to the virtual exclusion of all others: now the variety which exists in the nature of strictures, does not admit of the exclusive adoption of any one mode of practice; and, as this circumstance was productive of much annoyance to myself when I commenced practice, I endeavoured by attentive observation to ascertain the particular class of cases to

which one or other kind of treatment was especially applicable. Private practice, however, in general affords too limited a field of observation for the correction or establishment of conceived opinions. On being appointed Surgeon to the Finsbury Dispensary, and to the City of London Truss Society,—where many of the applicants are afflicted with diseases of their urinary organs,—my opportunities of observation were as extensive as I could possibly desire. This led me to establish in my own mind the truth of some opinions, and (I freely confess) to correct others which were erroneous. The general result, however, convinced me that an attempt to point out the particular practice which was suited to the different kinds of cases would be useful; and this is the object of the present treatise. I am fully aware of the difficulty of doing this in a clear, much less a perfect, manner: the experience, however, which I have had, leads me to hope that my views will be found practically correct; and I wish the reader to bear in mind, that my object

is not the promulgation of any thing new, but the proper application of that which is already known. I have endeavoured to render the book as small as possible, since the size and expense of professional works very much abridge their utility. In doing this, I have been obliged to omit many things; and thus it may happen that what I have considered judicious curtailments, may by some be regarded as omissions. I trust, however, that every thing necessary to be known will be found in its proper place. I have not thought it necessary to add a large number of cases: if the practice here recommended be good, and warranted by correct views of the disease, it requires no enumeration of successful results to lead to its adoption; if, on the contrary, it be injudicious or inefficient, a volume filled with cases would not ensure its establishment. The anatomy of the parts has been omitted, because to have given this complete would have materially increased the size of the book; and it is so perfectly

taught in the schools, that its addition was considered to be unnecessary. Should I find that this is deemed an omission, I can only say, that should there ever be a second edition, it shall be then subjoined; and in such a form that it may be procured separately. I may observe, that I do not pretend to instruct those who, like myself, have had opportunities of consulting the book of nature; wherefore I address myself chiefly to students and junior practitioners. Should any of my elder brethren peruse the work, it will certainly be interesting to know whether their experience has led them to form corresponding opinions. If, however, the book render the treatment of strictures less arduous to the student, or if it be found to contain what is useful in connexion with stricture in a smaller compass than other works, my object will be fully accomplished. With regard to style, I am fully aware that I have need of some claim to the indulgence of the reader.

PREFACE

TO

THE PRESENT VOLUME.

The natural anxiety felt by every writer to engage the attention or conciliate the approbation of his readers will, I trust, be considered a sufficient apology for the observations with which I am desirous of introducing the present Volume. The favourable reception given by the Profession to the First Edition of the Treatise on Stricture of the Urethra, has rendered me satisfied with the principles on which it was written. I have, nevertheless, subjected it to a careful revision, and as I have not been able to make many useful additions, I must rest content in having found nothing which I have any wish to expunge. The treatment therein recommended has been tried

on every occasion which a further experience of six years has placed within my power, and perhaps I cannot more readily explain the nature of a conviction thus matured, or enforce it in a less obtrusive or objectionable manner, than by the expression of my wish that every surgeon may subject the practice to the same species of ordeal. A few additional facts, and a short notice on the removal of Strictures by the lancetted catheter, are incorporated with the present edition. The papers on Stricture of the Rectum and Œsophagus, are the results of my experience in these comparatively rare diseases; they are offered in the hope that as ready practical references they may prove useful, but are by no means intended to obviate the necessity of a more enlarged reading on these subjects.

I have been induced to publish the Paper on the Diagnosis of Tumours in the Groin, from the conviction that surgeons in general require a degree of information on these subjects, which can only be obtained from a more close inves-

tigation than has usually been bestowed on them; but I have not the vanity to suppose that the desideratum is here supplied. I have severely felt on many occasions the difficulty of explaining points of distinction, which have, notwithstanding, seemed very obvious in practice: language has appeared to me to be as inadequate to the explanation of the multiform sensations conveyed by the touch, as it confessedly is, to that of an infinite variety of sounds, or the various shades and combinations of colours,—a correct idea of the grosser distinctions only can be conveyed by description. It would not have been difficult to have amplified the Paper, and it might, perhaps, have been put in a more imposing form; but neither of these would have added to its utility. The extensive opportunities which I have had of observing the diseases which occur in the inguinal region of the body, have put me in possession of many points of minor importance, which I have omitted. These omissions have arisen, partly from the

difficulties which I have mentioned, but chiefly from a determination to exclude every thing which might not be depended on as essentially characteristic of the respective diseases.

The concluding Remarks on Tracheotomy are intended to excite the attention of the profession to this operation as a more constant remedy than it has hitherto been for one of the most insidious and afflicting maladies to which human nature is liable. Lastly, I would observe, that in whatever points throughout the volume I may have agreed with or differed from preceding writers, it contains nothing (unless expressedly so stated), which has not fallen under my own observation.

EXPLANATION OF THE PLATE.

FIG. 1.—Represents very exactly the curve formed by the Urethra, in a preparation of enlarged Prostate in the possession of Mr. Stanley.

FIG. 2.—Represents the size of the smallest Catheter I ever introduce. It is made conical towards the handle to increase its strength, which otherwise (as the instrument is a tube) would be so inconsiderable as to endanger its breaking. This is No. 1 in the scale of sizes.

FIG. 3.—Is intended to represent the diameter of the largest Catheter I usually employ in the treatment of Stricture. It scarcely gives a correct idea, however, of the full size of the instrument. Both Fig. 2 and 3 represent also the precise form of the curved portion of the instrument.

FIG. 4.—Length and size of the tube to be used after the operation of Tracheotomy. I can confidently state that the Surgeon will be embarrassed if he employ any which is shorter. Those which are much curved, and of sufficient length to occupy a portion of the Trachea, which is beyond the opening made in it, are calculated to increase irritation.

FIG. 5.—Front view of the same.

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In concluding this very short notice of Mr. Macilwain's little work, we have no hesitation in averring that it is the most judicious, concise, and ably written treatise on the subject which we have perused; and that it is most admirably adapted for putting the student and junior practitioner in possession of all the valuable information which has been accumulated on the subject of stricture.—*Medico Chirurgical Review. July*, 1827.

Macilwain's *Treatise on Strictures.*—A complete work like this was much wanted, to condense into one volume the multiform doctrines and practice of the various writers on strictures; all of whom only detail their own views, and pass by others as quite worthless. The author, however, is far from being a mere compiler; he reasons well, and is often original. We shall review the work in our next Number.—*Foreign Quarterly. April*, 1824. *See also the succeeding Number.*

For further commendatory remarks on this work,—*Vide Cooper's Surgical Dictionary, last Edition, and Lancet. May*, 1826, *&c. &c.*

A TREATISE

ON

STRICTURE OF THE URETHRA,

IN WHICH THE DIFFERENT MODES OF TREATMENT ARE ADAPTED TO THEIR RESPECTIVE CASES.

CHAPTER I.

OF STRICTURES OF THE URETHRA IN GENERAL.

WHETHER strictures be considered with reference to the frequency of their occurrence, the occasional difficulty experienced in effecting their removal, or the sufferings they produce, it must be admitted that there is no complaint which more strongly demands the study of the surgeon.

It is the object of this Chapter to consider the different situations of strictures, the causes giving rise to them, and the kind and degree of alteration of structure by which they are accompanied.

Every part of the urethra, excepting its prostatic portion, is liable to become contracted by this disease; but it occurs more frequently in some situations than in others. In no situation, however, are strictures more frequently found, than in the membranous portion, and especially in that part of it which is immediately posterior to the bulb; they also very commonly occur immediately anterior to this commencement of the corpus spongiosum. From this point forward every part is liable to contraction, but not equally. The three inches next to the bulb are more frequently affected than the remaining portion, and the external orifice is but seldom the seat of stricture, where, nevertheless, it occasionally occurs. I may here observe, that I lately saw a case of congenital malformation of this part in a child four months old. The opening of the urethra was on the inferior surface of the penis, about a third of an inch behind the natural situation. The natural orifice appeared to be closed by a thick and moderately firm membrane. This I divided; and, by means of a pointed instrument, brought the two openings in continuity with the canal

and each other; although this condition of parts was maintained, the urine continued to flow entirely by the inferior aperture. It would have been necessary, therefore, to have kept an instrument constantly in the urethra, and to have brought the edges of the malformed orifice in contact, having previously dissected off their integument. As this proceeding is inconvenient in so young a child, it has been for the present deferred. It is stated in some books, that strictures frequently happen at the bulb: if, by this, we are to understand that part of the urethra actually covered by the posterior extremity of the corpus spongiosum, I confess my experience has led me to think differently. That the urethra does become narrower at this part, must be admitted, but by no means, I think, so frequently as has been represented.

There is a considerable variety in the form and extent of strictures. There may be a simple narrowing of a part of the canal, as if a ligature had been thrown around it: the opening by which its different portions communicate being in the centre, or the contraction being irregular, the opening may be placed superiorly,

inferiorly, or laterally. In general, the narrowing is limited to a line or two in length; but in some cases it extends much farther, the canal having a continuous diminution in its calibre for an inch or more: and again, there are instances in which the whole tube, from its membranous portion forwards, has become lessened in its diameter. Sometimes there is a sort of bridle thrown across the urethra; and the impression, in a case of this kind, which is made on a soft bougie, resembles that which would be produced by drawing a piece of fine twine across its point. I have met with several cases of this kind; and if it be not frequently observed in dissection, I should be disposed to account for it by the appearance being, in all probability, destroyed in slitting open the urethra. It does not appear, however, to have escaped the observation of the accurate Morgagni, who speaks* of having found "fibras" and "carneas fibrillas" in the urethra.

The change which the mucous membrane undergoes consists of a greater or less thickening.

* Vide Lib. xlii. Sec. 41, et seq.

In some instances it proceeds so far, that no similarity with its healthy condition is discoverable, appearing almost of a cartilaginous texture, whilst in others scarcely any change can be observed; and there are degrees of alteration intermediate between these extremes. Where the contraction is considerable, and the membrane but little altered, there is a thickening produced by deposition exterior to it. The change of structure is generally proportionate with the duration of the complaint; and if this have been very long, the whole of the urinary organs usually becomes more or less diseased.

There is no morbid condition of the bladder, ureter, or kidney, which may not co-exist with stricture of the urethra. Those which, either separately or in combination, are more generally found, as the consequences of diseased urethra, are the following: thickening of the bladder in its muscular and mucous structure; if the latter be in a great degree, the rugæ, which are usually seen in its collapsed state, become enlarged so as to resemble in size the carneæ columnæ of the heart; the interspaces between them, being developed so as to form

sacculi. To these changes may be added a great increase of the vascularity of the mucous membrane, either partial, or extending over the whole surface, with puriform secretion, or a thinner kind of fluid with minute flakes of lymph floating in it, and ulceration. The changes in the ureters consist of increase of their calibre, which may be capable of admitting a writing quill, or equal that of a small intestine of the young subject. I have seen more than one case of the latter description. The kidney is either found enlarged in its whole structure, or with this condition confined to its pelvis only, in which part the change generally appears to commence. In addition to this, there may be found pus, puriform fluid, and occasionally calculous deposition.

No age is positively exempt from stricture: it may be said, however, to occur more frequently after forty than antecedent to that period; it is true that many patients become thus afflicted long before they have attained the age of thirty, but this does not invalidate the general position above stated. Some difficulty, it must be confessed, occurs in settling this point definitively,

in consequence of its being often impossible to ascertain exactly how many years a stricture may have existed before the surgeon is consulted for its removal.

An elaborate description of the causes of stricture would require a division of them into those which operate by a direct and indirect agency; but in order that the enumeration of them may be as concise as is consistent with clearness, it may be said, that any circumstance capable of producing violent or continued irritation in the urethra, will produce stricture; and it will be found on examination, that all the causes enumerated by authors, or observed in practice, are to be referred to one or other of these phenomena. The urethra has a complexity of function—its sympathies are numerous—it affords an illustration of the contiguous, continuous, and remote sympathy, as described by Mr. Hunter. Hence, when the remote and proximate causes of its diseases are considered, the catalogue becomes very extensive.

Peculiarity of constitution predisposes some individuals to stricture; although it is but seldom that we can trace it as unequivocally resulting

from this idiosyncrasy, independent of the intervention of local excitement, for reasons which obviously present themselves on considering the functions of the generative organs. As no part of the body is exempt from the influence of general constitutional disorder, so may the urethra become the seat of its local development. In the present state of science it is not necessary to enforce the truth of this proposition by any laboured reasoning. The effects frequently produced by stimulating or other substances taken into the stomach on the urethra, in persons who have stricture, as well as in those who have not, are objects of familiar observation. The least deviation from their ordinary mode of living will, in some individuals, induce irritation in the urethra or bladder, where there is no evidence of disease in these organs. Further, all cases of stricture are invariably relieved by a moderate and rational diet, and the symptoms uniformly aggravated by a contrary line of conduct. A volume might be filled with facts and arguments leading to the same conclusion; but at this day it would be a work of supererogation. Habitual abuse of wine or ardent spirits will

induce stricture; but, whether by an influence directed to the health in general, or to the urinary organs in particular, it is difficult to determine. There is no cause to which strictures are so frequently referred as gonorrhœa; but whether it exerts so extensive an influence in their production as is generally supposed, may be fairly questioned. Stricture often takes place at a period very remote from the existence of any affection of this kind, and in patients who never had gonorrhœa in their lives, as also at an age which must be altogether exempt from the agency of such a cause. I shall not pursue this subject further, as Mr. Hunter's book contains facts and observations which any candid man must consider as conclusively establishing the fact, that gonorrhœa is only to be considered in common with other causes, though perhaps more frequent than many others. Injections no doubt give rise to stricture; but I cannot agree with Sir Everard Home to relinquish their employment, because the ill consequences which have sometimes followed it, I believe to be referable to their having been injudiciously administered. The experience of Mr. Hunter showed that

strictures occurred as frequently after gonorrhœa treated without injections as with them; I could readily believe much more frequently, and for the following reason.

Diligent investigation shows that stricture does not commonly proceed from violent inflammation, but from a sort of irritation, moderate but continued, principally characterized by a morbid increase of sensibility, sometimes attended by discharge. Thus it is found that where stricture can be traced to gonorrhœa, the latter has been neglected, and the irritation, of which the discharge is sufficient evidence, unnecessarily protracted; during which period the patient is liable to sources of excitement which he is wearied with foregoing. No state can be more favourable to the formation of stricture than that to which I have just referred. Injections, therefore, when properly employed, by removing the irritation and discharge, so far from conducing to the occurrence of stricture, become actually indirect preventives of this disease. The consideration of gonorrhœa, would lead to a digression; I shall therefore merely mention the principles to which it is necessary

to attend in the employment of injections. First, they should never be used whilst there is pain in micturition; 2dly, their quality should never be of such a nature as to produce more than a temporary smarting; 3dly, their strength should be increased as the canal becomes less susceptible; and, lastly, their action should be confined to the seat of the disease. Immoderate indulgence in sexual intercourse is with propriety considered as a cause of stricture. It is obvious that the continued irritation and excitement to which the organs are thereby subjected, must be very favourable to its production. Calculus in the bladder, enlargements of the prostate, and affections of the rectum, are occasional causes of stricture.

Of the two first it has been said, that the urethra is never naturally distended, and that stricture happens in consequence of the canal gradually adapting itself to such circumstances. I do not believe that this is the *modus agendi;* since, if it were, the canal should become contracted throughout. It appears more rational to attribute it to the sympathetic irritation to which the parts are constantly exposed; and

when strictures form anteriorly to one which has existed some time previous, it is probable that they owe their origin to the influence of the same principle. The causes hitherto mentioned operate by a continued irritating influence. Violent irritation, without being continued, will also produce stricture, as is shewn by cases where it supervenes after wounds or other injuries of the parts concerned.* It may be observed generally, that strictures are preceded by a peculiar state of the canal, the detection of which will lead to the prevention of their occurrence. The condition to which I allude, is the "Irritable Urethra," the symptoms and treatment of which will be next considered.

In concluding this Section I would observe, that as the facts enumerated influence the mode of treatment, they should be constantly borne in recollection.

* I recollect, some years since, a boy was admitted into St. Bartholomew's Hospital, in consequence of having lost a portion of his penis, by the bite of a horse. The result of this injury was a very severe stricture at the *posterior portion* of his urethra.

CHAPTER II.

OF IRRITABLE URETHRA.

It has been stated in the preceding Chapter, that, for the most part, strictures are preceded by a peculiar state of the canal denominated Irritable Urethra; wherefore it is obvious that the causes giving rise to both maladies will be similar. The urethra, however, may labour for a considerable period under this affection before contraction takes place in any part of it, of which I have seen repeated examples. The morbid sensibility which is its principal feature may affect the whole canal, or be confined to one portion of it; in which latter case it is almost invariably situated in that part enveloped by the prostate gland. As the treatment usually includes the occasional introduction of instruments, it may at first appear unnecessary

to attempt any other diagnosis than these are capable of affording. But when we consider, first, the great and in many cases the insuperable objection made by patients to the introduction of instruments; 2dly, the difficulty of making them understand how their introduction can be necessary where there is no stricture; and, 3dly, that some cases admit of relief without their employment—the diagnosis becomes important: and although it is confessedly obscure, yet I believe, in many cases, it is to a discriminating practitioner sufficient to enable him to distinguish the two maladies. First, then, with reference to the volume of the stream in micturition. Persons with irritable urethra will occasionally make an exceedingly small stream, yet at other times it shall be of the natural size: now, although in stricture its volume varies considerably at different periods, yet it is never to the same extent; attentive inquiry showing it always to be less than natural. Again; we find also that the diminution has progressively become more considerable, which is not the case in simply irritable urethra. It is by no means uncommon to find

patients making water in a full stream after a meal, although previous to this it was exceedingly small, and the urethra so irritable as to give a feeling of strangury—a difference which never happens to the same extent in stricture. Involuntary emissions* are occasionally attendant on stricture, but they are scarcely to be considered as a common symptom; whereas in simply irritable urethra nothing can be more frequent: and I am the more confident that this difference exists, from finding that they are sometimes described as a symptom of stricture occurring at an early period of the disease.† Where these are a leading symptom, the irritation is frequently confined to the prostatic portion, but not invariably, as I have seen

* I have seen very many cases tending to establish this point. One morning, whilst this treatise was in course of publication, I had occasion to examine the urethra of a patient who consulted me a few days previously for symptoms which rendered him confident that he had stricture. On his informing me, that since he had employed the measures recommended to subdue the irritation, his stream had been on some occasions as large as natural, I recollected that he had not complained of involuntary emissions. On making an inquiry as to this point, he said that he was very frequently troubled with their occurrence. Examination detected a highly sensitive prostatic urethra, but no stricture.

† Howship on the Urinary Organs.

examples of the contrary. As far as my observation goes, a greater or less disorder of the general health usually accompanies this affection, whereas in stricture it is frequently by no means so easily discoverable; it would seem as if this farther development of disease had rendered the character of it more local, except indeed where the symptoms have made such progress as to react on the general health in their turn. Irritable urethra, besides giving rise to symptoms somewhat analogous to those of ordinary stricture, will sometimes induce others, which may be considered as the occasional attendants on that complaint. The former we need not mention at present. By the latter, I mean abscess in perinæo, painful enlargement of the testicle, and hydrocele. The extensive opportunities afforded me by the City of London Truss Society, where a great many patients apply with hydrocele, under the impression that they have hernia, induced me to examine the urethra in this complaint generally; but I cannot say, although the number examined altogether was considerable, that I could establish any very satisfactory or useful conclusion. In some few I have found

stricture—in others irritable urethra; but in many, neither of these affections could fairly be said to exist. I can therefore only mention its co-existence with these complaints, as an occasional occurrence, with which most surgeons are already well acquainted. I have seen one case which leads me to think, that even organic disease of the testis may result from the condition of the canal of which I am now speaking, when its influence is exerted on a disordered constitution. It was a man who applied to me with a large lobulated swelling in the situation of the left testicle. Although not very painful, its external character (being hard in some places and soft in others) induced me to think it of no very benign nature. The state of the man's health, the large size of the tumour, its close proximity to an inguinal hernia on the same side, together with irritation and slight enlargement of the glands in the groin, forbad its removal. Having symptoms of irritation in the urethra, it was examined and found to be very sensitive. The occasional introduction of bougies was accordingly had recourse to, and their employment was followed by a diminu-

tion in the tumour too apparent to be mistaken. The relief was, however, but of short duration; the tumour again increased, and he gradually sunk, and died. The preparation is in the museum of my friend Mr. Langstaff, to whom I gave a more detailed account of the case. The structure of the tumour does not admit of description, except that in some parts it presented an appearance similar to medullary sarcoma.* In the treatment of irritable urethra, it should be observed, that there are some cases in which change of air and attention to the general health are alone necessary, and others in which nothing else will relieve the symptoms. In general, however, the treatment consists in the introduction of instruments directed by a principle not altogether previously unknown in surgery, but first applied to the urethra, as I believe, by Mr. Abernethy, to whom the Public and the Profession are otherwise so much indebted. This consists in diminishing the morbid sensibility of the canal, by habituating it to the mechanical stimulus of an

* Mr. Langstaff considers it a true specimen of this disease.

instrument, on the same principle as we do ulcers to the chemical influence of our common stimulating applications. We should commence by an instrument calculated to produce the least irritation, and increase this in proportion to the diminishing susceptibility of the urethra. No instrument should be introduced until those measures have been employed which should precede the introduction of instruments generally, for which I refer the reader to the treatment of stricture.* When we have employed those for a few days or a week, a well-made, highly-polished elastic gum instrument, enclosing a fine wire, should be introduced, and repeated at intervals, longer or shorter in proportion to the improving state of the urethra. In general, once a-week will be sufficiently often, except towards the conclusion, when it may be done twice during that period with advantage; and as metallic instruments generally

* This is not always absolutely necessary, but it is highly expedient. In no case can it do harm, whilst in many it will save the patient from a severe fit of irritation. It appears, therefore, to be (as a general rule) the best that can be recommended.

produce more irritation than those of elastic gum, they may at the same time be substituted for those of the latter description. As small instruments are difficult to introduce, produce more irritation, and give us no information of the real condition of the canal, should there be stricture, their use is to be avoided; yet it is not advisable in this case to employ one of the full size, because it will produce too much irritation for our present purpose, the canal not being capable in this condition of submitting to the natural distention of its sides, which, if forced, will be productive of an increase rather than a diminution of irritation. I generally commence with No. 10, increasing its size at every subsequent introduction. In some cases, (notwithstanding the employment of measures recommended previously) we cannot introduce an instrument on the first trial, by reason of the excessive irritation it produces; but we always succeed on the second or third attempt, for although the bougie may have only passed through a portion of the canal, its presence there, will in a degree relieve the irritability of

the whole. On the first and second visit, the instrument should only be allowed to remain in the canal for a few seconds; its residence there being gradually prolonged, so that at last it may be allowed to remain a few minutes with advantage. Rest will very much facilitate the favourable progress of these cases. I have, in general, however, had patients whose avocations denied them this advantage; but I never neglect enjoining it where circumstances admit of their compliance. If motion should be found prohibitory of improvement, the bougie may be introduced the last thing at night, when the individual will often be enabled to resume his ordinary avocations in the morning with impunity. Throughout the whole treatment, those measures which are either directly or indirectly calculated to relieve irritation in the parts concerned, should be rigorously enforced, and which will be mentioned in connexion with the treatment of stricture. With regard to hydrocele, enlargement of the testicle, and abscess in perinæo, their treatment will be mentioned after that

of stricture, as it differs not in principle, whether occurring from one or other affection. As I have been obliged to allude to the introduction of instruments, it is expedient to describe the mode in which this is to be accomplished, in the next place.

CHAPTER III.

ON THE INTRODUCTION OF INSTRUMENTS IN GENERAL.

On first consideration, nothing would appear more easy than the introduction of an instrument into the bladder, provided, first, that it were accommodated to the curve of the urethra; secondly, that the canal proved to be of the usual size; or, thirdly, if it were narrower than usual, we employed an instrument of a proportionate diameter. A very little experience, however, convinces us that a strict adherence to other rules is necessary, even where the canal is comparatively healthy; and that if there be stricture, the difficulty is frequently so considerably increased, as without certain manipulations to prove insuperable. We very com-

monly hear of surgeons who are or have been particularly successful in operations of this nature. Dessault is known to have been very expert in these cases; and I recollect, when in Paris, to have heard that the surgeon of the Hôpital de la Maison Militaire du Roi, was particularly happy in his mode of introducing catheters, having very seldom failed. I am, I confess, far from attributing these instances of flattering result to any superior knowledge of the anatomy of the parts in the individuals concerned: with this every student can easily render himself familiar: yet I have often experienced the utility of certain manœuvres, which difficulties in practice suggest, and which the success attending their application leads us to remember and appreciate. Some of these will come under our notice. Instruments are introduced under very different circumstances; but there are a few rules generally applicable to the direction of our choice, which should be adhered to. Whatever be the composition of the instrument, its form should be cylindrical; since, if it be conical, and its passage be obstructed, we are at a loss to know if the obstacle

impede the point, or whether this may not have passed a stricture which is incapable of admitting its increasing diameter. An elastic gum bougie should never be employed without a wire in its centre, or some other contrivance to give it a certain fixity of form; without this it is impossible to have a complete knowledge of, and control over the direction of its point, on account of the tendency of the instrument to straighten itself in its progress through the canal. It is essential that the surgeon should be able to vary the direction of its extremity even to ensure the evasion of natural obstacles. Suppose, for instance, it should hitch in the pouch of the verumontanum, how can we otherwise make it traverse the upper part of the urethra, which is often an essential condition to its introduction? If the elastic gum catheter be employed, care should be taken that its stilette be sufficiently large to effect the same purpose. Sir Everard Home speaks of patients who felt the wire in the instrument; I have never noticed this circumstance, but can easily imagine it possible if the wire were not contained in the centre of the bougie, or if the

catheter were thinner in some parts than in others: if, however, the instrument be well made, it seems somewhat inexplicable, since the urethra is not capable of making the least impression on instruments of this composition. Gum catheters are generally sold in the shops, with the stilettes so small as to be scarcely of any use, which is worse than having none at all; since, in the latter case, the conviction that we cannot control the direction of the point, prevents us from using any force capable of doing mischief. As the course of the urethra is curved, such should be the curve of the instrument. The degree of curvature in common bougies, or even in those of elastic gum with wire is not very material, since neither instrument is absolutely unyielding, the last two inches being of most consequence, where it should be moderately bent. In metallic instruments it is more particularly desirable, however, that the curve should correspond to that of the urethra. The form which is generally given to them approximates more or less to that recommended by Dessault, forming the segment of a circle six inches in diameter; or

that employed by Sabatier, the curvature of which represented the segment of a circle seven inches in diameter. Mr. Stanley, however, adapting the catheter to the natural curve of the canal, employs an instrument altogether straight, except within about two inches of its point, where it is bent as represented in the plate.

I recollect seeing M. Larrey introduce a catheter still less curved even than Mr. Stanley's, which he said he had used for many years. There is no doubt that a person accustomed to introduce instruments, may employ them of various curvatures, or even absolutely straight; indeed, I have done it myself, but confess I prefer that recommended by Mr. Stanley to all others.* I have never found any so easy of introduction; or any which conveyed to the operator so clear a conviction of the exact part of the urethra through which it was passing. The larger the instrument which the par-

* Occasionally we meet with a case, where a curve somewhat different from that here recommended passes more easily. It may be possible that the course of the urethra is not precisely the same in every individual. Such cases, however, are rare.

ticular circumstances of the case will allow of, the less will be the difficulty of its introduction. Practitioners have often been contending with imaginary strictures from using small instruments. Of this I have seen many cases; one gentleman, who consulted me for another complaint, wished me also to attend to his stricture, which he said had existed some time. He had been under the care of another practitioner, who had passed several times a bougie (No. 6) a considerable distance down the urethra; but he had not reached the bladder, and the patient found himself but little relieved: to this account he added his symptoms, which induced me to examine his urethra. It was certainly irritable, but I succeeded without much difficulty in passing a full-sized elastic bougie into his bladder. There can be little doubt that the former bougie had hitched in some of the lacunæ, since the irritability did not seem sufficient to account for the failure in its introduction. All instruments should be held lightly in the hand, as we then recognise with greater accuracy the degree of any impediment opposed to their progress; and no greater force should

ever be employed, than is necessary to effect a gentle pressure against the obstacle. The position of the patient is also of consequence: it is immaterial, indeed, whether he be sitting, standing, or lying down; but it is very necessary to assure ourselves that there exists no pressure in the perineum, either by his clothes, if standing, or by any bed-clothes, if lying. It is also of consequence that the pelvis should be placed perfectly horizontal.* The penis should be placed between the thumb and forefinger of the left hand, whilst the instrument is gently introduced with the right. It is immaterial whether we commence with its concavity or convexity towards the abdomen; I generally commence with it in the latter direction. Having passed the orifice, I press the instrument gently onwards, turning it gradually as it proceeds, in such a manner, that when it arrives at the bulb its concavity is upwards. I turn it in this way from having observed that the lacunæ are thus more readily avoided, keeping the point as much as possible to the

* I mean, that the anterior superior spinous processes of the Ilia, should be in a straight line.

lower and lateral parts of the canal. On reaching the bulb, the handle should be depressed as the instrument proceeds, when it will usually enter the bladder. The obstacles which impede the passage of instruments, may be divided into those which result from the natural structure of the parts, and those which are the consequences of disease. For the sake of brevity, I shall consider together the means by which they are to be overcome, or avoided. When any obstacle is encountered, the instrument should be gently pressed against it, for a few seconds or a minute; if we are unable to proceed, it should be withdrawn to the extent of an inch, and again gently pressed forwards, its point being directed to the lower or lateral parts of the canal, to avoid the lacunæ, one of which it may have entered, and which lie chiefly on its dorsal surface. If this do not succeed, we may suspect that the opening through the contracted part is not central, but that its situation may be superior, inferior, or lateral; wherefore, the direction of the instrument should be varied accordingly. Sometimes, when the extremity of the instrument has

entered the stricture, it is so closely held there that its further progress is arrested; in which case, giving it a gently rotatory motion will often overcome the impediment. This mode is recommended by the French authors. Mere irritability will often obstruct an instrument; and where the methods already mentioned have failed, I have frequently succeeded by allowing it to remain in the urethra a few minutes, and then it has passed on without difficulty. On some occasions I have succeeded by the following manœuvres:—

When patients have been much alarmed, I have told them that I would wait a few minutes, withdrawing the instrument about an inch at the same time, and observing accurately the extent to which I have done so; I have then engaged them in conversation on subjects foreign to their complaint, and in a few seconds, suddenly, but not forcibly, pressed on the instrument, which has then passed the situation of the former obstruction. A difficulty, not unfrequently experienced by young practitioners, results from the handle of the instrument being depressed too soon, in which case its

point presses against the arch of the pubes;* the mere recollection of this circumstance is sufficient to enable the surgeon to avoid such an obstacle. Instruments of considerable size often meet an impediment in the pouch formed by the verumontanum, which in general will admit a bougie (of No. 6). This I have seen the source of much embarrassment where the operator did not immediately recollect the anatomy of the parts; and as it constitutes an obstruction where stricture is never found, it cannot be too strongly impressed on the mind of the student. To avoid this obstacle, the operator should raise both the instrument and penis towards the abdomen, and keeping the point of the former to the upper surface of the canal, should depress them together. The consideration of enlarged prostate may appear foreign to the object of this treatise, yet in connexion with the introduction of instruments it is necessary to mention it, as well as the means by which the impediment it offers is to be avoided. This

* Perhaps it would be more correct to say, against the triangular ligament of Camper.

impediment is, in general, easily recognized; first, by its occurrence in the situation where stricture never occurs; secondly, by examination in the rectum; and further, by its seldom occurring except at advanced periods of life. It may happen that the third lobe of the prostate is alone enlarged, in which case the situation of the obstruction would be the only circumstance by which its nature could be ascertained. In a patient with enlarged prostate, whom I visited in the country, I succeeded in introducing a silver catheter, formed as recommended by Mr. Stanley. It is however better, when you are properly provided with elastic instruments, to increase the curve and lengthen it at the same time, in conformity with those changes which the course and length of the canal undergo in such cases; * here also the point of the instrument should be kept in close proximity with the upper surface of the urethra; this is much facilitated by pressure against the perineum or in the rectum. The

* The curve figured in the plate is that represented by the urethra in a preparation possessed by Mr. Stanley; whose liberality on this, as on many other occasions, I feel happy in thus publicly acknowledging.

expedient suggested by Mr. Hey, however, often succeeds where every thing else fails; it consists in nothing more than withdrawing the stilette to the extent of about two inches, and then gently urging on the catheter. The effect this produces is to raise the point of the instrument very considerably, and thus allow it to pass over the projection. It is here especially requisite that the stilette should fit the catheter, as the curve formed by its partial removal is then much increased. I cannot conclude this section without strongly inculcating the necessity of avoiding undue force under any circumstances. It is inconceivable how small a degree of force is capable of rupturing the membrane of the urethra. Many preparations, in this metropolis, present lasting and melancholy memorials of the unskilfulness of surgeons on this point. In some specimens which I have seen, there are false passages of various lengths and directions; and, in one instance, I have seen a passage made directly through nearly the whole length of the left corpus cavernosum. The caution here indicated, applies with additional force to the employment of metallic or

other unyielding instruments. When it is recollected how numerous are the occasions on which surgeons are called to introduce instruments under circumstances of difficulty, I feel confident that the prolixity with which these rules may have been laid down will be excused. No written instructions can communicate that superiority of tact, or impart that availing confidence, which is the result of experience alone: nevertheless, if the operator bear thoroughly in mind the anatomy of the parts; if the methods here attempted to be explained be carefully observed; if the introduction of the instrument be attempted at proper periods and under as favourable auspices as the urgency of the circumstances may admit, he will seldom be foiled in the accomplishment of his object.

CHAPTER IV.

OF THE SYMPTOMS OF STRICTURE.

THERE is a considerable variety in the symptoms of stricture in different individuals. In the first place, many of them may be absolutely wanting; secondly, where they all exist they may vary in severity; and thirdly, there are cases in which, although there is much difference in the degree of rapidity which marks their progress, the symptoms do eventually acquire the same general character. These varieties may no doubt be influenced by a correspondent variety of causes, but in the majority of cases they will be better explained by the usual habits of the patients. There are cases, however, which do not admit of this explanation; but whose peculiarities must be referred to an idiosyncrasy in the individual, which is difficult

to define. Notwithstanding what has been just observed, the symptoms are sufficiently uniform to allow of my describing them, first, as they generally occur, and then adding what may be considered as greater or less exceptions to the general rule. The accounts which patients usually give on their first application, is the following: they complain of having, for a considerable time, experienced some difficulty in micturition, that of late it has been more frequent, and that the volume of the stream has become considerably diminished. Although minute inquiry generally informs us that the stricture has been of some standing, and in some instances has existed for years, yet it may happen that it is only a few months or a year since the patient's attention has been directed to the disease. This is very intelligible; for, in conformity with what we observe in other parts of the body, the bladder has a power of accommodating itself to a change of circumstances. Its strength, for a long time, may increase so correctly in proportion to the increase of the obstacle which opposes the ejection of its contents, that a very considerable

period elapses before the difficulty in making water becomes cognizable to the patient, or it occasions an annoyance so trifling as scarcely to excite his attention. This increase of strength in the bladder frequently renders the formation of stricture so insidious, that the urethra at the affected part is very narrow before the individual is aware of the existence of any contraction whatever: the bladder, however, at length becomes unable to empty itself, and the abdominal muscles and diaphragm powerfully act as coadjutors, so that each effort to make water is accompanied by a straining which is very distressing, and the complete evacuation of the bladder is often not accomplished even by these combined forces, as we frequently discover by the immediately subsequent introduction of instruments. The straining which accompanies stricture, and which seems necessary to evacuate the bladder, although it be occasionally exceedingly annoying to the patient at the time, is more important with reference to the results which are its consequence. I am firmly of opinion that there are a great number of patients labouring under

hernia, which has been produced by no other cause. I must confess, that I had seen a great number of instances of stricture in ruptured patients, before I drew any inference from the observation of their co-existence. A case of retention of urine, however, induced me to pay particular attention to this point. The individual laboured under the usual symptoms of that complaint; and when his sufferings were relieved by the evacuation of the bladder, he immediately requested information as to the nature of a tumour in his groin, which examination showed to be a small inguinal hernia. On endeavouring to ascertain how long this had existed, the man was perfectly clear that it was only subsequent to the attack of retention of urine. Indeed, any person at all accustomed to the manipulation of herniæ, would have felt no hesitation in pronouncing this, independent of any collateral evidence, to be one of very recent occurrence. The circumstances of the case, however, recalled to my memory many others in which hernia and stricture were combined: subsequent observation has shown me many more, and has led to the opinion which I have just ex-

pressed. As the straining, however, varies considerably in its degree, and in many cases is so trifling as to render a man very sceptical of its influence in producing hernia, I was particularly inquisitive in my subsequent inquiries as to this symptom: in every case I found it very considerable; and as the hernia was not traced by the individuals in question to any extraordinary exertion, I feel warranted in considering it as resulting from the symptom which I am now considering. At the same time, of course, I am fully aware, that these complaints may easily co-exist without either having the least influence in the production of the other. As I do not immediately recollect having heard this effect of the straining in stricture particularly insisted on, I am prepared for a difference of opinion; and this I can readily understand, since the opportunities which practitioners in general have of examining hernia are comparatively limited—I say comparatively, because, during the time that I held the appointment of surgeon to the Truss Society, I had the means of examining some thousands of ruptured patients, and thereby enjoying a field of

observation which can, I believe, be obtained no where besides. Presuming the fact to be established, the practical inference is certainly important.* For in addition to the other well known character and consequences of strictures, it shows how necessary it is that the treatment for their removal should be commenced at an early stage of the disease. In ordinary micturition, when the bladder is but very moderately distended, the abdominal muscles and diaphragm are, as it were, instinctively put in action to assist in the commencement of the urinary evacuation; and in stricture the efforts of these powers are so gradually increased, that a patient is but little aware of the force which they are exercising. Further, it may be suggested that the position in which a patient stands during micturition may, in a degree, be considered favourable to the occurrence to which I have referred as resulting from the combined influence of the abdominal muscles

* Mr. Lawrence has observed facts analogous to those here mentioned.—See his valuable Treatise on Ruptures, page 18, second edition. Notwithstanding which, I apprehend that surgeons in general are by no means sufficiently impressed with the fact, at least as regards the frequency of its occurrence.

and diaphragm. To continue the enumeration of the symptoms, it may be observed that the stream, besides being less in volume, is usually misshapen, being either spiral, flattened, or forked: there is also a dribbling on the linen after micturition; and the same circumstance happens with the seminal fluid after sexual intercourse.* Involuntary nocturnal emissions are occasionally a symptom of stricture; but, as has been before observed, they more frequently accompany the peculiarly irritable condition of the urethra which is so often a precursor of that affection. If the disease be neglected at this period, all the symptoms rapidly increase in severity; the stream becomes excessively small, the straining very violent, and the calls to make water are so frequent, that a patient may be obliged to rise perhaps twenty times in the night, and as many in the day, to execute this function. This depends on the sympathetic irritability of the bladder, which not only renders it incapable of containing more than a small quantity of urine, but which also induces

* The urine at this period frequently possesses an unusually fetid odour.

a painful action of it after the water has been evacuated, so as in some cases to resemble a common symptom of stone. To these symptoms may be added, pain in the loins, front of the thighs, darting sensations in the perineum, all of which may separately or together attend those previously described. It may be doubted whether discharge from the urethra, and pain in this canal, should be included among the ordinary symptoms; they are decidedly not unfrequent, yet I have seen a very great number of cases without either of them. With regard to this discharge, it may be observed, that it has frequently led surgeons to mistake stricture for gonorrhœa. The latter complaint, when neglected, leaves the urethra (although discharge may have ceased) in a state of irritation; and in such cases, even if there be no stricture, a muco-puriform discharge frequently follows immoderate indulgence in sexual intercourse; and if there really be stricture, it is very likely to happen. A patient thus situated applies to a surgeon, and with soothing measures the discharge ceases in a few days, both parties believing that it was gonorrhœa: nothing, however,

can be more easy, than to distinguish the two complaints; the origin and progress of the one is altogether dissimilar to the other. In the case which has been mistaken, it will be found that the discharge occurred very quickly after connexion; the ardor urinæ is neither so severe, nor usually so confined to the anterior part of the canal. We often find, on inquiry, that the same circumstance has happened before. The cessation of the discharge generally takes place in a much shorter time than that resulting from gonorrhœa, whereas in some cases it is prolonged to an indefinite period. It is under the latter circumstances that a man who has previously mistaken the case, blunders (if I may be allowed to say so) on its real nature; for, perplexed that the discharge has not yielded to a long round of medicines, &c., reputed remedies for gonorrhœa, he is induced to examine the urethra, when he discovers, for the first time, his error.* Before the more unusual symptoms

* This occurs also where there is simply irritable urethra without stricture, and in which case it cannot be too strongly impressed on the reader, that it is relievable by the treatment allotted to that affection. Since the publication of the first edition, I have known no less than three surgeons of eminence fail in such a case, merely because exami-

are mentioned, it may be observed, that the foregoing are always aggravated by intemperate living, or immoderate indulgence in sexual intercourse. I have frequently known patients who imagined themselves better, after taking a larger quantity of wine than usual; but if they have felt any benefit, it has only been temporary, as the moment the immediate stimulating effect is removed, the symptoms return with augmented severity. Those symptoms which, though not very infrequent, can still be scarely included in the account of common cases, are the following: —The difficulty of micturition is always influenced by change of temperature, and usually rendered less by warmth; there are patients, however, who make water more easily by passing from a warm to a cold temperature. Although there is generally more or less disorder of the general health, yet, in some instances, this is very strongly marked: some apply with furred tongue, costive bowels, disordered ap-

nation of the urethra afforded no evidence of stricture. These were cured by the persevering use of the instrument. Indeed, if treated as irritable urethra, the cases all do well, with this exception, that in a few there will be a drop or two of thin discharge in twenty-four hours, but with no other symptom or inconvenience.

petite, lassitude, and inaptitude for exertion; others are subject to attacks of intermittent fever:* a third class have a peculiar kind of nervousness, or irritability, which it is difficult to describe; but I perfectly agree with those authors, who describe an habitual state of excitement as a frequent attendant on this complaint, evinced by the patient being annoyed by trifles, and his temper ruffled by circumstances which, at other times, would scarcely have excited his attention; occasionally, in addition to pain in the testicles, there is inflammation and enlargement of these organs, and I have known one testicle become enlarged and again subside, and then the other become affected in the same manner. It is often difficult to determine whether the constitutional disorder, which co-exists with stricture, be the consequence of that complaint, since they may reciprocally act on each other; but that it is so, in many cases, is clearly shewn by its total subsidence on the

* I have never witnessed this as clearly resulting from stricture where no instrument had been passed, but it is mentioned by writers on this subject.

canal being restored to its natural condition. Cases are recorded, in which patients have consulted physicians for disorder of their general health, which, from its obstinate nature, and from its subsiding only on the discovery and subsequent removal of stricture, evidently depended on the latter affection. I saw, about a year and a half since, a remarkable case of this kind. A man about 38 years of age had been admitted in the Finsbury Dispensary, under the care of my respected colleague, Dr. Hancock, with a very much disordered condition of his general health; his secretions were unhealthy, his tongue furred, and he suffered such excruciating pain in the different joints of the body, that he was confined entirely to his bed, not being able to stand. He could obtain no rest at night, although, in addition to various remedies usually employed in rheumatism, he had others especially directed to procure sleep. No benefit whatever resulted from the treatment; at last, his micturition became painful, and attended with a considerable discharge of muco-purulent matter. He now mentioned to Dr. Hancock

that he had a stricture, who immediately referred him to me. I found him in a most deplorable condition, for, besides the foregoing symptoms, he now suffered from occasional rigors, which seemed to exasperate the pain in his joints, and which were otherwise exceedingly distressing to him. Examination discovered that he had a much strictured urethra, which was put right by means of the silver catheter, assisted during the treatment by three applications of the kali purum. As his urethra became free, his sufferings were rapidly mitigated, and in two months he was quite well. The irritability before described is easily intelligible, when we consider the peculiar functions, the exercise of which is interfered with or prevented; and the annoying nature of the symptoms, frequently rendering a man incapable of enjoying society; or, indeed, of following any favourite pursuit steadily which would compensate for the loss of it. It may be observed, that the severity of the symptoms, is not always commensurate either with the duration of the disease, or the degree of stricture; and that, although the progressive development of them varies consi-

derably in rapidity, in different individuals, it is, nevertheless, in the latter stages, always more rapid. If stricture in an advanced stage be still neglected, the difficulty of micturition increases, until at last retention of urine supervenes. If this be not relieved by art, the urine becomes effused, and produces inflammation and sloughing, more or less dangerous, according to the importance of the parts interested. The bladder may burst, and the urine be brought in contact with the peritonæum, in which case we have no hope for the safety of the patient; more commonly, however, the urethra ulcerates posterior to the stricture, and the urine becomes effused into the cellular tissue of the penis and scrotum, perinæum, or by the side of the anus, and occasionally into that covering the groin and front of the thigh, thus giving rise to abscesses and fistulæ, the treatment of which will be considered in the proper place. Sometimes patients will have all the symptoms of stricture with great severity, where the actual diminution of the canal is inconsiderable. Occasionally, a patient, in the advanced stages of the disease, never makes water in a

stream, but it continually dribbles from him with much straining, constituting a kind of perpetual strangury, so that I have known a man obliged constantly to wear a bottle, previous to his being properly treated. True incontinence of urine occasionally attends stricture;* this, however, is not common. We often find patients obliged to make water the instant they feel a desire to do so, which depends on the great irritability of the bladder; but this is, of course, very different from that which I term incontinence, because in the latter the urine flows involuntarily; this, however, rarely happens. Other symptoms, though infrequent, are occasionally met with; thus, I have known patients complain of pains in the bones, particularly during night, who have asked whether it is not probable that they might result from the remains of a venereal affection which they have had some years before. Eruptions on the skin have occurred with stricture, and I recollect a case in which they disappeared on the removal of this complaint. They subsequently, however,

* I lately saw a case of this kind in which there was an enlarged prostate.

returned, without being accompanied by any renewal of the stricture. When it is considered, however, that a disordered state of the general health most frequently accompanies the complaint, it will, I think, be immediately perceived that the various symptoms, to which it may thus indirectly give rise, must be infinitely diversified. The occasional attendants on stricture will be treated of in their proper place.

CHAPTER V.

GENERAL OBSERVATIONS ON THE TREATMENT OF STRICTURES.

It is unnecessary to enter into an analytical examination of all the methods which have been proposed for the removal of stricture; and as it would oblige me to exceed the limits prescribed to this treatise, I shall, with one or two exceptions, only refer particularly to those which, in different cases, I have found useful.—The principles on which the restoration of the canal to its natural condition has been attempted, have varied considerably. In general, the object has been either to effect a mechanical but gradual dilatation of the contracted portion; to remove the impediments by the application of substances, the precise nature of whose action is somewhat undeterminable; or, lastly, to de-

stroy them by the application of caustic. The first plan has been executed in two ways; first, by introducing an instrument through the stricture, and then, extending the different parts of which it is composed, by means of a screw, or some other contrivance for that purpose;* or by the successive introduction, at proper intervals, of bougies, or suitable instruments of increasing diameter. For the purpose under present consideration, I prefer decidedly the latter plan; but, as I have not been in the habit of using the dilator, I shall briefly give the reasons by which my choice has been influenced. A very little consideration of those changes which constitute disease, or those by which organs are restored to their healthy condition, will convince us that neither one or the other can be effected suddenly; and that the safety with which the latter is effected, is, generally, more or less, in proportion as its accomplishment is gradual. This remark is equally applicable to the diseases of other parts, as it is to those of the urethra. It is not consonant with reason to suppose, that we can stretch living parts as we

* Usually called Dilators.

can inanimate substances, possessing an elastic property; yet we must think after this manner if we have recourse to the dilators; although, as before observed, I have not been in the habit of using them, I have frequently seen the disadvantage of increasing the size of the instrument too rapidly. They never can be of any use except where the stricture is capable of admitting an instrument, however small; and, in such a case, the restoration of the canal can be effected by other means which enable us to regulate the progress of the dilatation with mathematical accuracy. I would beg also to observe, that doubts may justly be entertained whether, by the latter plan, the stricture is removed by dilatation, strictly so called. Many canals of the body certainly, in their healthy condition, admit of this dilatation, and so may the urethra when strictured, provided the alteration in structure be inconsiderable, since the natural texture of the lining membrane does not seem prohibitory of it. But where those changes have occurred, which uniformly attend cases of any considerable duration and severity, it is more probable that the pressure of the

instrument produces absorption, either ulcerative or otherwise, of the newly-formed substance; I am, however, of opinion that the dilator is an instrument always unnecessary for the removal of stricture, and frequently improper. For the foregoing reasons a bougie or silver catheter is to be preferred, where it is the object to remove the contraction by dilatation; to which may be added another, viz. the facility with which, in most cases, this is effected.

Some persons have, in severe cases where no instrument could be passed into the stricture, endeavoured to overcome the obstruction by thrusting a conical catheter, or other firm instrument, onwards; I dare not say through the stricture, for the probability is that it rarely takes the route intended by the surgeon. Indeed, this practice is fraught with so much danger as never to be admissible. There are many facts, shewing the difficulty and mischief attending it, which should absolutely prohibit any prudent surgeon from venturing on its employment. Firstly, the most accurate knowledge of the anatomy of the parts will be insufficient to enable us to ascertain that we are

employing force in the right direction. Secondly, it should be recollected, that a strictured portion of the canal is less yielding than any other part, and the instrument will certainly pass where it meets with the least resistance; and lastly, I would recommend those who are disposed to follow this practice, previously to inspect the different preparations in this town, shewing the frightful deviations which have occurred in the passage of instruments from the route intended.

It is no argument to say, that in a few fortunate instances this practice has been successful. There are difficulties in the way of getting evidence on the contrary side which are obvious; but the preparations sufficiently shew that, were these removed, there would be no dearth of it. I have referred to this point in a former section. Examples of false passages made by instruments are frequently presented to us, but we generally inquire in vain for the histories of the unfortunate patients. Inexperience might occasion a moderately cautious man to thrust the point of a catheter through the urethra; aud those who are well acquainted

with the facility with which this may be done, might, perhaps, in such a case, excuse it; but a surgeon, who knowing (as he ought) the hazard attending the practice I am endeavouring to reprobate, would, if he made a false passage, be absolutely inexcusable. In cases where no instrument can be passed through a stricture, by the employment of caustic or other means, it is better to cut down to and divide the stricture, in a manner hereafter to be described. In removing strictures, by introducing instruments of increasing diameter, surgeons have either employed common wax-cloth bougies, those made of elastic gum, catgut, or the metallic, which last has been called sound or bougie, as it was composed of flexible or unyielding materials. First, then, of the common wax-cloth bougie: this instrument is of little use, except for taking the impression of a stricture,* for which purpose it is well calcu-

* It has been recommended to affix a wax cloth point to the end of a firm instrument, in order more effectually to take the impression of a stricture. I have never found it necessary to adopt this plan, although it appears well calculated for the object in question.—*Vide Du Camp's Traité des retrecissemens de l'Urethre.*

lated; for any other, the elastic gum is preferable, because it is smoother than the common wax cloth, and glides more easily through the urethra. The wax-cloth bougie is more likely to be detained by spasm alone; and if it be of small size, in a case of firm and narrow stricture, or even where the canal is irritable, the point of the instrument, as soon as it meets the obstruction, yields and turns round against the side of the urethra; and then the continuance of pressure can only urge the point still further in the wrong direction it is taking. Sometimes the stricture will make a circular indentation on a soft bougie which is prohibitory of its further progress, at least it would appear so; for I have often passed an elastic bougie of the same size without much difficulty, after the common bougie had failed. The elastic gum has all the additional recommendations mentioned in the chapter on the introduction of instruments in general. I never use catgut bougies. We have no control over the direction of the point of these instruments any more than we have over those of elastic gum, when used without a wire in their centre. In ad-

dition, the surface of the catgut, is much less smooth than that of the elastic gum.

Metallic bougies are either flexible or unyielding; the former, I believe, are at present but seldom used; they are too little flexible to have any advantage over the elastic gum, and too much so to supply the place of a firmer instrument. The metals or combination of metals of which they are made, are different; but of all metallic instruments, the silver catheter, I think, has indisputable claims to our preference; it admits of an exceedingly fine polish and uniformity of surface, which very much contribute to facility of introduction; its lightness enables us to judge with the greatest accuracy of the force which the obstacle opposes to its progress, as well as that which we may employ to overcome it: further, we are assured of its entrance into the bladder by the urine escaping through it. The cases in which the plan of dilatation forms part of the treatment, as well as those in which it appears especially applicable, will be described hereafter. The employment of caustic, and of the argenti nitras in particular, is an old remedy revived by Mr.

Hunter; and since his time, Sir Everard Home has employed it very extensively. The numerous cases recorded by the latter gentleman, sufficiently prove its powers in removing strictures; but his work, written with a candour well worthy of imitation, contains ample evidence to shew that its indiscriminate use is by no means unattended with danger. Hæmorrhages, retention of urine, and intermittent fever, particularly it seems in those who had resided in warm climates, were frequently consequent on its use. The effect of this caustic is to produce a slough which could not be in some cases confined to the stricture; otherwise we are at a loss to account for such profuse hæmorrhage as that which occasionally happened. From the very nature of caustic, it is difficult to confine its action; this we find on applying it to other parts of the body where we have an opportunity of witnessing its effects. The consequences above mentioned naturally induced practitioners to look for some other remedy; many altogether relinquished the employment of the argenti nitras; and its disuse probably became more extensive, in consequence of Mr. Whately's

shewing us how much more safely we might employ the kali purum; which, in the generality of cases, is equally effectual. However, there can be little doubt that, in relinquishing the argenti nitras altogether, many ran into the opposite extreme. We frequently expect more from a remedy than a cool consideration of its nature would warrant, and when disappointed we as hastily reject it altogether. Impressed as I am with the various occasional inconveniences attendant on the use of the argenti nitras, even in the most skilful hands; and believing, as I do, that in general the kali purum is an equally effectual, and certainly a safer application, I feel obliged to admit, that there are a few cases in which the use of the argenti nitras is to be preferred, and which will be described in their proper place.

The mode in which Sir Everard recommended the caustic to be applied, is as follows:—"Take a bougie of a size that can readily be passed down to the stricture, and insert a small piece of lunar caustic into the end of it, exposing the surface of the caustic, but surrounding it every where laterally by the

substance of the bougie. This should be done some little time before it is used, for the materials of which the bougie is composed become warm and soft by being handled in inserting the caustic; and therefore, the hold the bougie has of the caustic, is rendered more secure after it has been allowed to cool and harden. This bougie, so prepared, is to be oiled and made ready for use; but previous to passing it, a common bougie of the same size is to be introduced down to the stricture, to clear the canal, and to measure exactly the distance of the stricture from the external orifice. This distance being marked on the armed bougie, it is to be passed down the stricture immediately upon the other being withdrawn." Cases having occurred, however, in which the caustic had escaped from the bougie, Sir Everard, I believe, afterwards preferred using an instrument into which a small cylindrical portion of caustic had been introduced at the time the bougie was manufactured. I have, however, always employed the first mode when ever I have had occasion to use the argenti nitras, and have never met with any accident of this kind—

always, however, using an instrument, the point of which is too large to enter the stricture. As the above directions do not inform us of the definite size of the piece of caustic employed, I may add that I have seldom used a portion greater than the head of the largest sized pin. Another mode of using the argenti nitras has been suggested by Mr. Whately, which consists in making a sort of paste with mucilage, and moulding it round the extremity of the bougie. As I do not see the particular advantage attending this mode, I have never adopted it; that the caustic may, in this way, come in contact with other parts besides the stricture, is sufficiently obvious.

The kali purum was introduced as a remedy for stricture by Mr. Whately; it is certainly a most powerful caustic, yet, by reason of its composition, it can be applied in the manner recommended by him without any fear of bad consequences. The security in its use arises from the minuteness of the portion employed, and from its being readily miscible with oily and mucilaginous matters. There has been a great deal of speculation concerning the precise

mode in which this caustic acts. It is probable that it acts differently in different cases: Mr. Whately speaks of its producing an abrasion, but there is something unintelligible in this term when it is applied to the action of a chemical substance on living parts. The probability is, that it generally acts as a stimulus primarily, whatever may be its ultimate effect; and that, be the quantity ever so small, it occasionally produces a slough; if it be large, it will, of course, do so. Its usual effect in strictures is, however, very analogous to that of stimuli elsewhere. Irritable strictures are removed very quickly by kali purum, and in those which are not particularly so, may we not believe, that it stimulates them, and produces absorption. It is an admitted principle, that newly-formed parts are incapable of sustaining vehement action; and if this reasoning upon determined facts apply to strictures, which in many instances may be so considered, it readily explains the mode of action by which the kali effects their removal. I have made some experiments with a view to ascertain its precise mode of action when applied to the urethra; but as they

were not sufficiently conclusive, I shall not mention them further than remarking, that as far as any inference was warranted, it was decidedly in favour of the opinion that the kali acts as a stimulant. The manner in which the kali is applied differs little from that which is recommended for the argenti nitras: the quantity employed by Mr. Whately was, however, much smaller; in his work he has published a scale of sizes, the largest of which is not bigger than the head of a common pin. I have certainly often used a more considerable portion without any ill consequences following, yet I see no objection to the scale proposed as a general rule. Mr. Whately recommended the kali to be inserted on the end of a bougie of a diameter capable of entering the stricture. I never could understand the advantage arising from this plan, and have therefore always used it on a bougie of at least a size larger than the stricture would admit. If the point of the instrument pass fairly into the stricture, there must be a probability of the kali being applied to the healthy membrane posterior to it, whilst the object should be to confine its action strictly

to the affected part, on the surface of which, by the mode I recommend, it must be more extensively diffused. This is further promoted by turning the bougie gently in a circular manner, while the pressure which preserves it in contact with the stricture is continued. I may observe further, that it is not necessary under these circumstances to withdraw the instrument to a certain extent, and repass it as recommended by Mr. Whately, when the bougie has entered the stricture.

I have thus given a general view of the different modes of practice which are found most useful, or which have been suggested for the removal of stricture; and in considering the comparative utility of one or other of them, I shall be guided by the facts which practice has presented to my observation. I believe the great error in treating strictures has resulted from an attempt to remove them by one method; which experience shows to be fruitless and prejudicial; yet it is equally erroneous to suppose that every case requires a different kind of treatment. In speaking of the surgery of stricture, I shall first describe that mode, or combi-

nation of modes, which practice has shewn me to be most useful, in relieving ordinary cases, (which, however, have differed much in their severity); and afterwards describe those in which I have found one or other plan especially advantageous.

CHAPTER VI.

ON THE TREATMENT OF ORDINARY CASES.

As stricture admits of relief or of removal by different methods, and as there is a difficulty in choosing that which is most suitable to each particular case, it may be useful to inquire, before that treatment which I have found to admit of the most extensive application is described, what are the objects on the ready and safe accomplishment of which our preference should depend. They may be concisely stated thus: first, a restoration of the canal to its natural diameter; secondly, security from the intervention of untoward symptoms during the treatment; and thirdly, prevention of the recurrence of the disease. In order that the second object which I have mentioned may be obtained, I would recommend the prac-

titioner constantly to bear in mind, that stricture can only be overcome or removed in a gradual manner; for if the instrument be introduced too often, or its size be increased too rapidly, the urethra will become so irritable, that a fortnight or more may elapse before we shall be able to proceed with the treatment. As a general rule it may be laid down, that as long as the improvement is progressive, the surgeon and the patient should be satisfied. To prevent the recurrence of stricture is often extremely difficult, and I am persuaded that in some cases it is impossible. Practitioners have usually attributed the return of stricture to some defect in the treatment; and that many cases admit of this explanation, is sufficiently obvious, but I by no means believe that it applies so extensively as has been supposed. However perfectly we may restore the canal to its healthy condition, it is not in our power to remove the idiosyncrasy which occasionally disposes patients to the attack of stricture, much less to prevent them from exposing themselves to new sources of excitement. Even during the treatment, when the more distress-

ing symptoms are relieved, it is often extremely difficult to induce individuals to adhere strictly to the rules prescribed. As it is my object faithfully to give opinions warranted by practice, I must here candidly acknowledge, that I know of no treatment which will uniformly prevent the return of strictures, although in many cases it may certainly be accomplished, provided the patient avoid all sources which have an obvious influence in their production. In the generality of cases the following combination of two modes of treatment is to be preferred. The first application made by a patient is usually under circumstances exceedingly unfavourable to the introduction of any instrument; the canal is highly irritable, and contracts so strongly on the bougie throughout its whole extent, that it is difficult or impossible to ascertain the seat of stricture; it is better then to defer the examination for a few days,* the interval being employed in the

* There can be no doubt of the propriety of this practice, although the anxiety of some patients is such as almost to oblige the surgeon at once to examine the urethra; and if the delay is only to be obtained at the expense of continued anxiety, its utility becomes questionable. Under such circumstances, too much gentleness cannot be employed.

administration of the following measures, which admit of being divided into constitutional and local: the constitutional treatment consists in freely evacuating the bowels, in recommending an exceedingly mild and unirritating diet, and the abstinence from wine and spirituous liquors; it is not very material what medicine we employ for the first purpose. Jalap and calomel, the latter with colocynth and soap, or castor oil, will generally answer this intention sufficiently well: I have usually preferred the jalap and calomel; it is quicker than the colocynth, and less nauseous than the castor oil. Five or six grains of jalap, and half a grain of calomel, are given every four hours, until a sufficient number of evacuations are procured; the bowels in this way are freely evacuated, the dose exactly proportioned to the effect we desire to produce, and its operation rarely attended with pain: this mode of administering purgatives is one of the many useful lessons taught by Mr. Abernethy, for which in practice I have had abundant reason to be grateful. It has another recommendation, viz. that medicines which usually give pain may, in this way, be

frequently administered without doing so. I have found it better to avoid giving saline purgatives, where the evacuation of fæces is the principal object, as they generally produce secretion without emptying the intestines, and a degree of irritation in the lower bowels, which for obvious reasons it is desirable to avoid; colocynth will occasionally have the latter effect, but this will seldom happen when it is administered in the manner proposed. The patient will, however, very often direct us in the selection of an aperient medicine; since, whatever he describes as usually evacuating the bowels comfortably, may with propriety be preferred. The diet should consist of plain boiled meat, with a portion of vegetables, and it should be very moderate in quantity. I have sometimes found advantage in prohibiting meat altogether, but this will seldom be necessary. The drink should be either barley water, toast and water, linseed tea, imperial, or some other equally mild liquor; beer, wine, and spirits, as I before observed, should be abstained from. It happens occasionally that there are symptoms which render other medicines necessary;

such as, disordered liver, peculiar sensation about the stomach, &c.; but, as there is an endless diversity in those affections with which stricture may be combined, it is impossible to say more than that the treatment of them must be left to the judgment of the practitioner, and must be regulated by general principles. The local treatment consists chiefly in cupping or applying leeches to the perineum, and fomenting the part with warm water night and morning; the latter is most effectually accomplished by the semicupium. Rest should also be enjoined, and the patient recommended to abstain from the indulgence of sexual intercourse, since this is obviously calculated to produce irritation. Latterly, I have been very explicit on this point, from having met with married men whose cases went on unfavourably until they resolved to comply with this injunction. Where there is evidence of greater irritation than usual, I have found much advantage from recommending a suppository (opii gr. ij. hyoscyami gr. v.) to be placed in the rectum the night previous to the examination of the urethra in the morning. I cannot, indeed,

speak too highly of suppositories, since I have several times proved their efficacy by means especially directed to that purpose. We cannot, indeed, expect that their beneficial effects should be permanent; but I have frequently known a patient, whose rest was completely destroyed by his calls to make water, sleep the whole night without being disturbed, after the application of a suppository; and, however temporary the tranquillity thus induced may be, it is always of the greatest consequence, by the facility it affords us of examining the canal. The object of our examination is to ascertain, if possible, the state of the whole urethra, hence it is not always expedient to employ a full-sized instrument; since, by so doing, we may only recognize the anterior stricture. Where the symptoms, then, are unequivocally indicative of this complaint, it is better to regulate our choice as to the size of the instrument, by the volume of the stream. I have generally employed one a size larger than the patient represents the stream to be when its volume is most considerable. For reasons before mentioned, the examination should be made with

an elastic gum bougie, inclosing a wire. If stricture be found, and its opposition to the progress of the instrument prove permanent, after the different manœuvres recommended, it should be withdrawn, a soft plaster bougie of the same size should then be passed to the point of obstruction, and pressed gently against it for a minute or two, when its extremity will generally indicate the situation and degree of the stricture. An instrument of the size indicated should then be introduced, and passed gently through the obstructed portion. We cannot always proceed thus far at once, but if the manipulation be gently conducted, we may, generally speaking, be able to do so. This mode of proceeding may appear unnecessarily tedious, but I have so often passed an elastic gum catheter where the common bougie had failed, that I feel obliged to recommend its use in the first place. Nothing appears to me more desirable than to gain a knowledge of the state of the whole urethra as early as possible; for should we find that there is more than one stricture, the progress of the case will be rendered much quicker by directing our attention

especially to that which is nearest to the bladder. If the canal be exceedingly small at the seat of stricture, the silver catheter is to be preferred to the elastic gum bougie, for we have no control over the point of a small instrument of the latter description. I cannot too strongly recommend the greatest care in the use of the small silver catheter, since it is especially calculated to do mischief, if more force be used than is sufficient to keep it fairly in contact with the obstacle. Where, indeed, the opening through the stricture is sufficiently large to allow of our employing an elastic gum instrument, there is considerable advantage in resorting to the silver catheter at the latter period of the case, for reasons which have been before mentioned in relation to irritable urethra.* When the catheter or other instrument has been passed into the bladder, it is right to leave it there for a few seconds only at first. Indeed, on this point, the same observations apply as

* I have seldom, of late, employed the elastic gum instrument, after I had once introduced the silver catheter. But, to some students, who have not had much experience in passing firm instruments, the elastic gum (until the canal has been somewhat enlarged) may be recommended as preferable.

have been made before, in the treatment of the above-mentioned affection. The size of the catheter should be gradually increased at each subsequent introduction. The intervals will vary considerably; at first it will rarely be advisable to attempt repeating the use of the instrument oftener than once a week, afterwards it may be done twice during that period with advantage. The passage of any instrument through the urethra generally produces more or less irritation, and this should always be allowed to subside before its employment is repeated. For the scale of sizes, I refer the reader to the plate, where the smallest and largest which I usually employ are figured. It is not very frequently necessary to use any other instrument than the silver catheter, where we are enabled to pass one even of the smallest size into the bladder, but it is often expedient to do so, and in cases of the following description:—it sometimes happens that, having dilated the strictured part to a given point, we are unable, notwithstanding the absence of any particular irritation, to pass an instrument of increased size at the next visit; in this case, we

may, by passing it to the stricture at two or three subsequent periods, be eventually enabled to conduct it through the canal into the bladder. The pressure thus made on the stricture may probably induce ulceration; it is objectionable, however, from its uniformly rendering the stricture so exceedingly sensitive; and, as considerable delay is occasioned by this mode of proceeding, I prefer, when I cannot increase the size of the catheter, employing the kali purum. I am informed that many practitioners have altogether relinquished the employment of this remedy, and I can only attribute it to their having expected more from it than it is capable of accomplishing, or to its having been incautiously applied. The kali has certainly appeared to me to be unnecessary in some instances, and (in the extent that we are warranted in employing so powerful a caustic,) inefficient in others; yet again, there are some cases in which it is a very useful assistant, and a few in which it claims decided preference. In the use of the kali, I follow the directions of Mr. Whately, with the exceptions mentioned in the fifth chapter. In all the cases (and the

number is very considerable) I have scarcely met with any unfavourable consequences resulting from it. It generally increases the tenderness of the part for a few hours, perhaps a day; and I have seen, though very rarely, pain in micturition for two or three days succeed to its application, but this is the worst consequence that I have ever witnessed.* The particular case in which this remedy is to be preferred to all others, will be mentioned in its proper place. Under the circumstances before mentioned, one or two applications of the kali will enable us to proceed with the treatment, and often render the urethra capable of admitting an instrument a size or two larger than that which, before its application, we failed to introduce. The period of treatment is thus shortened, and the patient generally suffers much less from the kali purum than from the repeated pressure of the silver catheter. The caustic should now, of

* I have met with one case in which the application of kali produced absolute retention of urine. This, however, was quickly relieved by warm bathing and aperients, and the stricture then admitted an instrument three sizes larger than the last attempted to be used. The patient got quite well without any further interruption taking place in the successive introduction of instruments of increasing diameter.

course, be laid aside, and the original plan persevered in. When we are enabled to introduce the full-sized instrument, it should be passed occasionally for a week or two, when the patient may be dismissed. On this occasion, I generally think it right to warn him of the usual causes of stricture, and admonish him with regard to regular living, and the influence which tranquillity of the general system has in preventing a return of his local malady. In severer cases I have also recommended patients to have their urethra examined once a-year, if circumstances rendered it convenient, because, should any disposition to stricture recur, it may with facility be removed. It is difficult to say what is the exact size of the catheter, with the introduction of which we should be content, since, to attempt any thing more than general rules on this point, seems perfectly absurd. It appears to me impossible, even where the canal is completely restored to its natural condition, to prescribe any definite rule in regard to this point; and for this reason, that there can be little doubt of great difference

existing in the diameter of the urethra in different individuals. The largest size I usually introduce is No. 14 of the annexed scale; in some cases I have been obliged to be content with No. 12, and in very old strictures, attended with palpable alterations in structure, I have been obliged to be content with a much less size, perhaps, about No. 9. The latter cases are, however, rare; and in general terms, therefore, it may be said, that No. 14 is the size with the introduction of which we should be satisfied. During the whole treatment, the patient should foment with warm water night and morning, and the bowels be kept regular; the occasional repetition of leeches or cupping to the perineum will powerfully assist us in preserving a quiet state of the urethra; should any untoward symptom occur, as an extraordinary attack of irritation, or intermittent fever, the introduction of the instrument should be discontinued, and absolute rest enjoined; as for the intermittent, the observance of the means just mentioned, combined with the use of gentle aperients, generally removes it in a few days. The other interruptions occasionally encoun-

tered in the treatment, will be spoken of as separate subjects.

In general, however irritable the bladder may have been at the commencement of the treatment, and, however severe and distressing the symptoms resulting from this condition of the organ, it gradually subsides with the progress we make in the removal of the stricture. There are, however, exceptions, where, notwithstanding the urethra readily admits of a large instrument being passed into the bladder, micturition continues very frequent, and the mucous membrane of this viscus so sensitive, that the contact of an instrument produces considerable suffering. Usually this occurs in cases of long standing, but not invariably; in such cases it may possibly happen that the disorder of the bladder has been the primary affection, but in most of those which have fallen under my observation, I believe it to have been secondary, and, from the facility with which it was removed, unattended by any material change in the structure of the organ. I do not mean to say that the muscular texture may not have been increased, for this so commonly follows stricture, that

there is scarcely any instance, where it has been of long standing, in which it has not happened in a greater or less degree.

The plan of treatment which I have found successful in relieving this unusually protracted irritation of the bladder, is the following:—in the first place, I relinquish entirely the introduction of any instrument, for I have found that in those cases where an anxiety to ascertain that there was no recurrence of the stricture, induced me to introduce a bougie, its employment was invariably succeeded by a greater or less exacerbation of the symptoms, with an increase of the mucous discharge, which usually, but *not invariably*, accompanies this affection. I enjoin a very strict regimen; the quantity of food is small, and of the mildest quality; abstinence from animal food is generally productive of benefit; and all vinous, spirituous, or other stimulating drinks, should be forbidden. Great attention should, of course, be paid to the bowels, no day being suffered to elapse without an alvine discharge; glysters are very useful, and may be administered every day; it is usual to medicate them with opium, but, as I gene-

rally use suppositories, I never recommend any other enemata than consist of warm water, or mucilage. In addition to this treatment, all that which, during the existence of the stricture, is employed for the promotion of a tranquil state of the parts affected, should be continued. With regard to the medicines which have been supposed to do good in these cases, or in the irritable bladder otherwise occurring, I cannot say that I have seen much advantage derived from their exhibition. As to injections thrown into the bladder, my experience leads me to consider them of very doubtful efficacy. I have known even warm water, used in this way, produce a considerable increase of discharge, unattended by any alleviation of suffering. I have certainly seen the carbonate of soda given with some bitter infusion, with about fifteen drops of laudanum, every three or four hours, productive of benefit; and some good has occasionally followed the exhibition of the same quantity of laudanum with camphor mixture, where the state of the stomach appeared to indicate the propriety of administering the latter medicine. Calomel and opium will some-

times be found useful, and I have seen cases in which it appeared to me that colchicum possesses some influence in relieving irritation of the urinary organs. A further discussion would lead me to consider the diseases of the bladder generally; this is not my object: I may, however, state, that where this viscus has become changed in its mucous structure, the most that we can generally accomplish, is to alleviate the sufferings of the patient.

CHAPTER VII.

OF THOSE CASES TO WHICH THE KALI PURUM IS ESPECIALLY APPLICABLE.

Of the general use of the kali, I have already spoken, and have included its employment in the treatment of ordinary stricture. Although its use, under the circumstances already mentioned, is advantageous, as it contributes to the more speedy removal of the stricture, it is nevertheless expedient rather than absolutely necessary. In very many instances, strictures of considerable standing may be removed by the use of the silver catheter alone; though, as I have before observed, the treatment of the same may be often happily expedited by the addition of the kali as described. The case, however, in which the kali is so particularly serviceable, is easily known and described—easy of relief by this caustic, but exceedingly

perplexing if otherwise treated. In the first place, I would observe, that in those individuals who have been presented to my observation, there has been some very obvious indication of a disordered state of the general health; although the extent of this, as well as its particular feature, has varied considerably. The usual symptoms of stricture are present, and, in general, severe; the peculiarly distinguishing character, however, is a most remarkable sensibility of the stricture. However gently you may pass an instrument*—however soft, or, indeed, whatever be its composition, the moment it arrives at the narrowed portion of the canal, the patient complains of severe pain; and, in those cases which I have seen, blood also invariably follows it when withdrawn. It is this latter circumstance which is calculated to lead the practitioner into error; mere irritability so commonly attends a stricture, and is so frequently relieved by the kali purum, that the excessive degree of it which characterises

* I have seen one or two cases where the hæmorrhagic tendency was unconnected with any extraordinary sensibility. This I regard as the exception; the combined characters, as contained in the text, the rule.

this case would not alone, in all probability, prevent a surgeon from at once applying this caustic. But a general impression, and so far not an erroneous one, prevails, that if a stricture bleeds, it is more prudent to delay the use of caustic, even where it is proposed eventually to employ it. I was much perplexed by these cases when I first met with them. I used various kinds of instruments; every measure that was calculated to relieve general or local irritation was strictly enjoined, and, as I had reason to believe, implicitly adhered to. Still, however, at the subsequent visit, the same failure in introducing any instrument occurred; and, notwithstanding the gentlest manipulations only were employed, the pain was still considerable, and blood (in some cases to the extent of several ounces) followed after the instrument was withdrawn. Thinking, however, that these were only extreme cases of irritable stricture, and that the ungovernable disposition to hæmorrhage was merely the result of the extraordinary sensibility, I applied the kali one morning to a stricture which was at the time bleeding pretty freely, although the

blood did not, in fact, flow otherwise than guttatim. The pain during its application was very considerable; yet, as it was not more than that which had been endured from the contact of the unarmed instrument, no part of it was, I think, attributable to the kali. The relief which followed, even within the space of twenty-four hours, was very considerable. Every symptom became diminished in severity, and the painful sensibility completely subsided after two applications; the disposition to hæmorrhage also no longer existed. I have since repeated this practice in every case in which these circumstances were present at the commencement of the treatment, without any hesitation, and have never had reason to regret so doing; the same good effects have been invariably the result. In all cases, the whole of the plan calculated to relieve irritation, has been perseveringly adopted at the same time, therefore, I cannot say what would happen if the kali were trusted to alone: were the surgeon to neglect this part of the treatment, it would be a gratuitous relinquishment of measures well known to be beneficial; so that it is

scarcely necessary for me to insist on the expediency of their adoption. The cases to which I have alluded, were those where at the same time no instrument, however small, could be passed into the bladder; a circumstance, which the subsequent progress shewed to depend, in great part, on the very small opening through the stricture.

Sir Everard Home, in the last book which he published, entitled, "Practical Observations on the Treatment of Strictures of the Urethra, &c." has spoken of strictures which bled before the argenti nitras was applied, but not afterwards. I cannot, however, gather from his description whether they were cases of precisely the same nature as those to which I have just alluded. The simple fact of a stricture bleeding before the caustic had been applied, and not afterwards, by no means of itself proves the cases to have been analogous. There are very few instances of this disease, of any severity, where a small quantity of blood does not, at one or other period of the treatment, follow the introduction of an instrument. Even in those strictures which are least susceptible at the commence-

ment, it rarely happens that a few drops of blood do not follow the introduction of the large-sized instruments, when the progress of the case renders their employment necessary. It is, therefore, to be remembered that hæmorrhage, even to a considerable extent, does not imply that the case in which it occurs is one of the kind here referred to, unless it be accompanied with a very remarkable sensibility; it being impossible to touch the stricture with the softest instrument, without exciting pain or producing hæmorrhage. I cannot undertake to say what would be the effect of argenti nitras if employed in strictures of this description, since I have never used it. I have not done so, because the kali has never yet deceived me, and because, as far as we can ascertain the mode of action of the two substances, as applied to stricture, that of the kali seems much better calculated to relieve the condition of the stricture, on which its hæmorrhagic disposition depends. I have already stated an opinion, that the argenti nitras produces a slough, and that the kali only stimulates; this cannot be explained in any other way than through the mo-

dified power of the kali, in consequence of its so readily mixing during its solution with mucilaginous and oily matters, since, when applied under other circumstances, it is much the more powerful caustic of the two. In furtherance of this opinion of its action, it should be remembered how exceedingly minute is the quantity employed; which, in these cases, should never be larger than the head of a common pin. It is then more calculated to relieve morbid susceptibility than any remedy which produces a slough: this, though not easily demonstrable with reference to the urethra, is at least highly probable, when we consider the mode in which the morbid susceptibility of other surfaces is most successfully relieved. In irritable ulcers, certainly, in some cases we find benefit derived from the complete destruction of the surface; but how much more frequently is this morbid condition relieved by the employment of what I may term graduated stimuli? The results which so frequently follow the use of argenti nitras, even should it be found to answer, produce, in my opinion, strong arguments against its employment, where the object can be ac-

complished by any other remedy: it is not fair, however, to impugn the efficacy of any application in a particular case without giving it trial; wherefore, if the cases described by Sir Everard Home, and those mentioned in this chapter, be identical, which I do not believe, experience can alone determine the preference which is to be given to either caustic; it is scarcely judicious, however, for a surgeon to lay aside one application which has not yet failed him practically, to try another, the success of which, to say the least of it, must be admitted to be doubtful. As I shall relate a case* of this kind of stricture, it is not necessary to say more than that the application of the kali should be conducted in the usual manner; the quantity should be exceedingly small, since the object is to stimulate only; wherefore, I have seldom employed a larger portion than that mentioned in the last page. I need scarcely repeat my decided opinion, that in these instances also, all the general treatment should likewise be persevered in.

Although I have met with many cases of the

* See Cases at the end of this Treatise.

kind described in the preceding chapter, I am induced to consider them of much less frequent occurrence than my individual experience had led me to imagine, since, as far as my inquiries have enabled me to judge, they are not known to the generality of surgeons. This can only be explained by the inexplicable difference which occurs in the experience of different men. Although I have enjoyed very extensive opportunities for many years of investigating the subject of this treatise, yet a kind of case has been recently mentioned to me by Mr. Stanley, of which I have never seen an example. It is a case in which the instrument is impeded throughout its whole course, its introduction into the bladder being a matter of difficulty, —so far it is like the severer forms of irritable urethra, or that case in which the canal has become strictured throughout; but here the analogy to either ceases, for the impediment afforded by the irritable urethra subsides by the course of the treatment, and the other case is perfectly relieved by the persevering employment of those measures which are adapted to that form of the complaint, whilst in that

variety of the disease to which Mr. Stanley alludes, any attempt to introduce more than a very moderate sized instrument, only aggravates the patient's sufferings; nor does the difficulty diminish, however frequently the use of the same instrument be repeated.

The following case, I subjoin in this place, because it shews, first, that the acute sensibility of which I have spoken, is not essentially connected with a hæmorrhagic disposition in the stricture; and secondly, that the latter symptom, when occurring singly, is nevertheless susceptible of relief by the same measures. A gentleman, about forty years of age, applied to me, and gave the following account of his case: —that he had for some time suffered with a stricture of the urethra, for which he had been under the care of eminent surgeons; but that nothing but a small instrument could be introduced, in consequence of the bleeding always excited by any attempts at passing one even of moderate diameter. He had been advised to remain as he was, and to have a bougie used occasionally, to prevent the canal becoming still more diminished in its calibre.

Anxious, however, to obtain more efficient relief, he applied to me. I told him I thought I knew the nature of his case, and that, if examination confirmed the view I felt disposed to entertain of it, he might rest assured he would do perfectly well. I examined him at first with a silver catheter, (No. 7,) which he said he thought would certainly excite the bleeding. Passing it, however, with great gentleness, it entered the bladder without any hæmorrhage occurring. At his next visit, although the utmost gentleness was employed, the hæmorrhage commenced immediately on the catheter being brought in contact with the stricture. I withdrew the instrument, and told him that a few applications of the kali purum would, I was certain, render his case one of ordinary character, and that he would speedily get well. As the gentleman under whose care he had been previously to his coming to me (and in whom he felt great and well deserved confidence) had, he said, a general objection to caustic, he declined submitting to the treatment, frankly telling me that he should again apply to him; but that, if the course of his case ever induced him to sub-

mit to my plan, that it should be conducted by myself. On this we parted. About three or four months afterwards he again called on me, and despairingly said that he now came prepared to submit to any plan I considered necessary. As examination now discovered that the character of the stricture remained unchanged, I immediately applied the kali. Even this one application moderated the hæmorrhagic disposition, and two more quite removed it. The case then proceeded rapidly to a successful termination, the largest instrument entering his bladder with facility, and no symptoms remaining except a drop or two of thin gleety discharge in the twenty-four hours.

CHAPTER VIII.

OF THOSE CASES IN WHICH THE EMPLOYMENT OF THE ARGENTI NITRAS WILL BE FOUND USEFUL.

In the generality of cases, the argenti nitras is now seldom employed: it is usually unnecessary, and, as has been before observed, very untoward symptoms frequently succeed to its application. Practice, however, informs us, that there still are cases in which this caustic is highly useful, and where it claims our decided preference to any other remedy. The particular case which I shall presently describe is rare, at least I have found it so; and the experience of those persons of whom I have enquired as to this point, is corroborative of this conclusion. The most remarkable feature in these cases is the extreme want of sensibility in the contracted portion. I feel great difficulty,

however, in giving an exact description of it, for nothing is more common than to find a stricture but little sensitive; and my meaning might thus be readily mistaken, since, in the latter case, no such means as are recommended in this chapter become necessary. In the case where the argenti nitras is useful, the rudest manipulations which are ever warrantable, are attended with no pain, neither does any blood follow the continued pressure cf metallic instruments on the affected part; although the other ordinary symptoms of stricture are present, their severity does not appear in proportion to the narrowing of the canal. The most annoying symptom I have observed in this instance is the straining, — which is violent, but distressing, rather than painful. The sensation imparted by an instrument to the hand of the operator, is as if he was pressing against something unusually hard. If the stricture be in the anterior part of the urethra, the latter is felt unusually hard on examination externally. That the characters of this kind of stricture may be still more clearly defined, I would observe, that it is the very reverse of that for which I have recommended

the kali purum. Opportunities of examining strictured urethræ, with the previous symptoms of which we are well acquainted, but rarely present themselves, and this constitutes a difficulty inseparable from any attempt at the perfect elucidation of their pathology. I have never examined the urethra of a patient whom I had previously known to be afflicted with this kind of stricture; but I suspect that the mucous membrane of the urethra becomes unusually changed in structure. If this stricture be treated by the introduction of instruments of increasing sizes, it can be dilated slowly with impunity to a certain point, until perhaps it admits No. 8 or 9; but the instant that the introduction of a larger is attempted, there is a sort of re-action in the stricture, evinced by a fit of irritation, rendering all the symptoms intensely severe, attended by a remarkable alteration in its character as to sensibility. The urethra, during this time, will not allow even a small instrument to pass through its strictured portion. I am convinced that our object here is to produce a slough, however superficial. This might be accomplished, no doubt, by the

kali purum, but not with any certainty with the largest proportion generally used, and the exceedingly powerful nature of this caustic renders the employment of a quantity sufficient to produce this effect highly unadvisable. Indeed, the very points of excellence properly attributed to the judicious use of the kali, as recommended by Mr. Whately, become imperfections. The slough, under these circumstances, being seldom produced, in consequence of the kali so readily mixing with the mucus of the urethra, and the grease with which it is covered. As I have before mentioned, it is impossible, by any plan of simple dilatation, to restore the urethra in this case to its natural condition; and merely dilating it so as to relieve symptoms, is not, of course, attaining our object. The argenti nitras may be applied either in the same manner as the kali purum, or in the manner recommended by Sir Everard Home: I have usually employed the former plan, and used but a very small portion of it at a time. I see no particular advantage in the plan of using the argenti nitras mentioned by Mr. Whately, and therefore have not adopted

it. The exact situation and form of the stricture should first be taken by a soft bougie, and then that, armed with caustic, should be introduced; a little oil, if it be passed expeditiously, will be sufficient to defend that part of the canal through which it passes to the stricture from being injured. The number of applications which will be advisable, must depend on circumstances. If ever so little progress be made, its use should be persevered in, and we should not lay it aside because no obvious benefit follows each single application. The urethra should be examined at each visit before the caustic is re-applied; and if, after three successive applications, ever so little advantage is gained, we are warranted in continuing its use. Should it, on the contrary, be found that no advantage is derived from its continued employment, I would never repeat it more than four or five times, since it can scarcely happen that the stricture shall withstand a greater number of applications. The use of the caustic should here be discontinued, because the probability is, that it has not been applied accurately to the stricture; there is danger, therefore, of the

side of the canal suffering: which dissection shews to have occasionally happened. To guard as much as possible against this circumstance, as well as any other which occasionally follows the use of the caustic, the means recommended for ascertaining the exact situation and form of the stricture should be attentively employed, and repeated previous to each successive application. The practitioner should always bear in mind, that the occasional interruptions in the treatment of stricture hereafter to be more particularly described, are especially to be guarded against in the use of argenti nitras; and, that the system may have as little disposition to become disturbed as possible, the bowels should be kept freely open, the usual soothing measures perseveringly employed, and the caustic never applied, except when the patient's avocations allow the indulgence of at least twenty-four hours absolute quietude, after such application. With regard to the length of interval between each introduction of the caustic, this will depend on circumstances which apply equally to the kali purum, or, indeed, to the use of unarmed bougies; the

local irritation or other consequences following one introduction being always allowed to subside before the caustic is again employed. Should hæmorrhage recur, we are directed by Sir Everard Home to enjoin rest, and freely evacuate the bowels; this, he states, is in general sufficient, but as large quantities of blood have been occasionally lost, it would be right to add the application of cold water over the parts concerned. Some individuals will bear, no doubt, a considerable loss of blood with impunity; but I have had patients where the constitution was so disordered, and in whom the general debility was so considerable, that I should have feared the result of such hæmorrhage as occasionally follows the application of the argenti nitras. I should have observed, that the cases here alluded to are, in general, of some years' standing; which also supports the opinion of there being a considerable change of structure in the contracted part. I have thus stated freely my ideas with regard to the extent to which we are warranted in using this caustic. The candour of Sir Everard Home sufficiently shows to the unbiassed reader, that

its indiscriminate use is inadmissible. Whether I have described the case proper for its exhibition, the experience and practice of others may determine. I confess that my experience of this particular kind of stricture is limited; and of late it has been of the use of this caustic in general, since, in by far the majority of patients, I succeed much better with the kali purum, silver catheter, or by their combined employment.

CHAPTER IX.

OF THE TREATMENT OF THOSE STRICTURES IN WHICH A MORE CONSIDERABLE PORTION OF THE URETHRA IS AFFECTED THAN USUAL.

In the general consideration of strictures, it was observed, that usually only a small portion of the urethra is included in any one contraction: nevertheless, it happens occasionally, that a considerable length of the canal, half-an-inch or more. becomes continuously contracted. Different practitioners have suggested different plans, for ascertaining the exact length of that part of the urethra which is thus affected; but as it is not my object to make a critical analysis of what has been written on stricture, I shall merely observe, that to me the plans proposed appear wholly insufficient for the accomplishment of their object, either as regards measuring the precise length of the stricture, or the

safe application of caustics to its surface.* This kind of stricture is not very difficult of removal, provided the disease be not of long standing, or what is of more consequence, the membrane be not materially altered in its structure. Should the circumstances just mentioned co-exist, the case then forms one of the most difficult that is met with in practice. It rarely happens, however, that the stricture is so changed, but that the urethra may be restored by a careful and judicious application of the means which I shall presently propose.

The mode in which these strictures are formed, may be either, that two separate ones have existed near to each other, and the interspace become subsequently contracted, or the whole space may have been simultaneously affected. The precise manner, however, in which they originate is not of much consequence, since it does not influence the treatment. It is important to remember, that here, as in shorter strictures, the opening through the narrowed space may not be central,—a

* Vide Arnott on Stricture of the Urethra; also Ducamp, Traité des Retentions d'Urine causées par le Retrécissement de l'Urêtre, &c.

point to which I shall have occasion again to allude. In endeavouring to ascertain the nature of the case I am considering, an accurate observation of the primary symptoms will afford us some assistance: it is by certain phenomena which occur in the treatment, however, that our knowledge of it is rendered certain. As to the primary symptoms in those cases which I have seen, they have not, in general, been characterized by unusual severity; and certainly in none by an intensity proportionate to the duration of the disease; the straining is, however, considerable. If the caustics be applied, little benefit follows their employment, nor any material pain, provided their application be conducted as in ordinary cases. If an instrument be passed to a stricture of this kind, which has long existed, the sensation afforded is analogous to that met with in those cases for which I have recommended the argenti nitras; and probably depends on the same circumstance, viz. the alteration in the texture of the affected membrane. If an instrument, however, be passed through the contraction, the sensation experienced by the operator is strikingly

different from that which he feels when passing it through an ordinary stricture; for, as it proceeds, we do not find that it moves more or less freely, as is usually the case, but that its progress is continued through a space that admits it with difficulty.* Now this certainly happens at first with some other cases, because the same sensation may be produced by an irritable stricture, contracting strongly on an instrument, and thus rendering its further progress difficult. Here, however, the difficulty diminishes with each succeeding introduction, whereas in the case to which this chapter refers, the resistance is continued; and however you may increase the size of the instrument, although the degree of resistance varies as the canal approximates to its natural calibre, the sensation experienced is analogous. The difficulty in withdrawing the catheter is also a striking feature in the old and long stricture; in other cases, where this difficulty occurs, we feel a sort of jerk when

* In some respects, it will be seen that these cases resemble those met with by Mr. Stanley; but in the latter, the impediment seems wholly to result from the intractable irritation which is superadded, which is not the case in those examples of stricture which are here considered.

the point has re-passed the contraction, the instrument then being drawn out with ease; but in the long stricture the difficulty is very much greater, and we cannot recognise in the same manner, or with the same accuracy, the moment when it ceases to offer an impediment to the return of the instrument. In a patient whose case I shall relate, this difficulty was strikingly illustrated: in this individual, I had just passed a silver catheter, when a gentleman called on me, by no means unaccustomed to the introduction of instruments. I mentioned the particulars of the case to him, and after the catheter had remained as long in the urethra as was intended, I requested him to withdraw it. He accordingly commenced doing so, but declared that he could not succeed, having employed as much force as he considered safe or vindicable. This was certainly a very severe case of the kind, but the difficulty is always considerable: the best mode of proceeding under these circumstances is, to commence by an attempt to withdraw the catheter in the usual way, the effort being extremely gentle, yet unremitted; the handle being directed

towards the abdomen. As the penis becomes elongated, in consequence of the stricture closely embracing the instrument, the egress of the latter will be much facilitated, by drawing the penis as it were from the left hand, whilst the attempt to remove it by the right is continued The best plan for the removal of this stricture that I know, is the employment of the silver catheter; and although the admission that in a few instances it is not successful, would imply that there is still a desideratum in the treatment of stricture, I verily believe that the use of this instrument, when properly conducted, presents greater advantages than any other plan which has been proposed.

I can confidently assert, that I have almost uniformly succeeded by this practice; and in one case where I was less fortunate, the patient was rendered very comfortable. (See Sheppard's Case). Where this practice is not successful, it will be found that the failure does not depend on the length of the stricture, abstractedly considered, but on the change of structure by which it is accompanied. The manipulation should be carefully and skilfully

conducted; and there are some rules to be observed, which, as they apply to this case in particular, I proceed to describe. It has been observed, that the opening may not be central; and this should make the surgeon particularly cautious when he feels confident that his instrument has entered the stricture; for if he attempts to facilitate the progress of the catheter by any additional force, should the opening be irregular, he will assuredly make a false passage. Therefore, whatever progress the instrument may be making, no more pressure should be excited than when it first touched what I may term the anterior part of the contraction. With regard to the intervals between each application of the catheter, they may be regulated as in ordinary cases: the time which the catheter should be allowed to remain, requires consideration. No one would certainly think of keeping an instrument in the urethra, if its presence was productive of much irritation; but as the benefit derived from each introduction is generally proportionate with the length of time that the urethra is capable of enduring the presence of the instrument, no

means should be neglected which have ever so remote a tendency to preserve a tranquil state of the canal. Besides employing the usual measures for that purpose, I would recommend the surgeon to introduce the instrument while the patient is in bed; and if he be suffered to rise, walking should be prohibited, and, indeed, all kinds of exertion, horse-exercise more particularly: for none is more prejudicial in stricture than this, for reasons sufficiently obvious. The period during which the instrument can be retained, varies; sometimes I have left it in several hours, and even a day and night, with impunity, and great benefit has followed; at other times, notwithstanding that the irritation excited was not considerable, I have regretted that I did not withdraw it in a few minutes. In truth, it is often a matter of experiment, since the degree of irritation at the time is not always precisely indicative of that which is to follow. The best general direction that can be given is, to allow the instrument to remain longer at each succeeding application; and to direct the patient to withdraw it the instant that he feels any particular uneasiness.

The catheter, however, need not be retained more than twenty-four hours, as no particular advantage is derived from leaving it permanently in; and we certainly run the risk of increasing irritation, besides rendering the treatment much more painful. In France, strictures are very generally treated by leaving an elastic catheter constantly in the bladder; and, in those cases which I saw, the patients were confined to their beds. But I should not be disposed to follow the examples of the French surgeons, in this particular; first, for the reason above stated, with reference to the increase of suffering; and, secondly, because it is quite unnecessary. The next point, in connexion with the treatment of the long and old stricture, is, the greater or less rapidity with which the size of the catheter should be increased. This cannot be accomplished in too gradual a manner; for, although the stricture will often admit a size larger than the last employed, I have found that it is not always expedient to employ it. This observation, however, refers especially to that period of the case when we are using the larger sizes; I mean, from about No. 8 onwards.

To this point we may generally introduce a larger catheter at each visit; but afterwards, I have generally found it expedient to introduce the same instrument twice or thrice, before the next in the scale is employed. The cases, however, vary much in severity; and it is only where a very great change, as I believe, has occurred in the mucous membrane, that the increase of the instrument requires the caution above implied. Should the surgeon in a case of this kind be unable to introduce any instrument, it would be right to give the caustics a trial; for, although they are not applied to the whole stricture, they may remove its anterior surface on the one hand, or diminish its irritability on the other, according as the kali or argenti nitras be employed. Generally, however, they are productive of little advantage; and where they fail, it may be necessary to divide the stricture by an operation, of which I shall speak more fully in a subsequent chapter.

CHAPTER X.

ON THE REMOVAL OF STRICTURES BY INCISION.

STRICTURES have a natural tendency to increase, and we occasionally meet with cases where a period of some years has been allowed to elapse before any efficient means are employed for their removal. The urethra, under such circumstances, occasionally becomes so contracted that the urine scarcely ever passes otherwise than guttatim, and the change of structure which has been wrought in the mucous membrane of the canal is so considerable, that the removal of the stricture by any of the means heretofore mentioned, is rendered impossible. A patient who is afflicted in the manner above described, is in a truly pitiable condition. The constant straining and irritation, the repeated threatenings of absolute

retention of urine, and not infrequently the actual occurrence of this malady, renders it highly desirable that some effectual means should be had recourse to for the alleviation of his sufferings. If a surgeon do not effect this, he may justly fear that his patient, worn out by pain, irritation, and accumulated sufferings, will sink under their united influence. Surgery, however, here offers resources, which if judiciously applied, lead frequently to the happiest results. In those cases the surgeon must adopt one of three plans: he must endeavour to overcome the stricture by forcing an instrument through it; secondly, he must wait until retention of urine takes place, and puncture the bladder; or thirdly, cut down to, and at once divide the stricture, and then introduce an instrument into the bladder.

With regard to the first-named plan, I have nothing to add to that which I have before observed in Chapter V.; for the reasons there given, I never would attempt a practice (as it appears to me) so unscientific, and so fraught with danger of increasing my patient's calamities. As to the second plan, I am persuaded

that there are very few surgeons who would now feel satisfied with so dilatory a mode of practice; or with deferring the division of the stricture, should they ultimately contemplate doing so, if the patient was labouring under the symptoms to which I have just alluded. The postponement of the operation is attended with many disadvantages; it is well known, that in cases of stricture the whole of the urinary organs generally become sooner or later diseased if the stricture have been neglected, and the degree of disease will of course be generally proportionate to the duration of the primary complaint. In addition to this, the health of the patient suffers so much from the constant irritation, that he is every day getting into a condition exceedingly unfavourable to the success of any operation whatever. The puncture of the bladder is certainly occasionally necessary in stricture, because it is in some cases impossible to obtain the conditions which prudence requires in performing the division of the contracted portion of the urethra; and if these be not attended to, an operation, highly useful when performed under proper auspices, might

be abandoned merely from its abuse. The case in which I would divide a stricture, would be one in which the previous history had given me accurate means of judging of the situation and extent of the contraction. Where I had reason to believe that the bladder was not diseased, and where the proper application of the remedies mentioned in this treatise had failed in procuring relief; in such a case, the operation has the twofold advantage of relieving the patient from considerable suffering, and at the same time effectually removing the complaint from which it has arisen.

Mr. Hunter divided strictures; he seems, however, to have confined the operation to cases where false passages had formed, or where the urethra had ulcerated posterior to the stricture, and urine become effused into the fat and cellular tissue of the surrounding parts: in the former case abstractedly considered, the operation will, I believe, seldom be necessary; and it is highly desirable to avoid the latter occurrence, which in cases where the division is necessary, may, I should think, be generally anticipated. This operation has been lately

revived, and I scarcely know to whom we are indebted for it. The first patient thus treated that I saw or heard of, was one in which the operation was performed by Mr. Stanley; who has since repeated it, with, I believe, uniform success. Mr. Shaw, of Windmill Street, however, appears to have been performing similar operations about the same period; for which I refer the reader to the twelfth volume of the Medico Chirurgical Transactions,—and they have now been repeated by other surgeons. The results afforded are highly encouraging, and will probably lead to a more extensive application of this mode of practice than I feel at present warranted in recommending. To a surgeon familiar with the anatomy of the parts, (and no other ought to undertake any operation,) the division of a stricture is easily accomplished, with an exception to which I shall presently allude. The manner in which the operation is executed differs but little, and I shall therefore describe it as I have myself seen it performed. The patient should be secured in the same manner as for the lateral operation of lithotomy. The operator first passes a grooved staff down

to the point of obstruction, in which situation it is to be securely held by an assistant: the surgeon now cuts down from the external parts to the point of the instrument; and having accomplished this, he continues his incision through the stricture.

The next object is to convey an instrument through the posterior part of the wound into the bladder; for which purpose the grooved staff should be withdrawn, and an elastic gum catheter introduced in its place. Now the only difficulty which I have seen, consists in finding the urethra from the wound; indeed it has, in some cases, contracted so much as to render the employment of a probe necessary in order to discover it. For this purpose ordinarily you require another instrument to enable you to direct its point to any part of the wound you may wish with facility. But then you have two instruments, the one introduced to the point of stricture, the other from the wound into the bladder. This it is desirable to avoid, since it is inconvenient to the patient, and of course retards his recovery; which cannot, indeed, take place until one instrument be passed

through the whole track of the canal. In order to meet this objection, the surgeon should be provided with a long elastic gum tube, at least twice the length of the ordinary catheter: for then he can draw so considerable a portion of it through, from the anterior part of the canal, as will enable him to turn round the point and direct it to any part of the wound, in his endeavours to find the urethra, with the same facility as if he were employing a separate instrument. Having passed the catheter onwards to the bladder, the surgeon should then withdraw so much of its length through the glans penis, as only to leave that ordinarily given to catheters in the canal, and cut off the superfluous portion.* It is right to leave the instrument in the canal for several days at least, in order that the parts may have every opportunity of healing over as quickly as possible. If it be withdrawn at an earlier period, considerable difficulty may be experienced in again introducing it into the

* Should the surgeon not be provided with an instrument of this kind, he must allow the catheter introduced by the wound to remain for a few days. The urethra will now be so much more easily discoverable, that an ordinary catheter may be passed through the whole canal without difficulty.

bladder. In one case the catheter remained three weeks without any particular inconvenience; in general, however, it would hardly be prudent to allow it to remain so long a period, as it might become so encrusted with sabulous or calculous matter, as to render its removal difficult or painful. The after treatment must, of course, be regulated by circumstances. If no particular irritation supervenes, absolute rest, a low diet, and keeping the bowels regular, will be sufficient; and the lighter the local applications the better, simple dressing alone being requisite. If, on the contrary, the irritation prove considerable, its removal must be attempted by active local depletion, by warm baths and opiates; since it is highly desirable to avoid withdrawing the instrument, if possible. The exception I before alluded to, as rendering this operation difficult, is where the fat, cellular tissue, &c., in the perineum and its vicinity, are much thickened and diseased by the previous occurrence of abscesses and fistulæ in perineo. In an individual so situated, the parts would have become so changed in structure and appearance, that the most expert

anatomist might be foiled in his attempts to discover the urethra; as, indeed, is reported to have happened to Dessault. I have thus stated as much as I feel warranted in doing, on the incision of stricture: although it is not, strictly speaking, a new operation, we still want additional cases in order to enable us to limit its performance with accuracy. My present impression is, that it will in time be performed much more frequently than it has hitherto been done; and in many cases supersede a long course of treatment by bougies, catheters, caustics, or other remedies, which, although ultimately successful, are frequently as painful and annoying to the patient, as they consequently are distressing to the surgeon.

The preceding chapter was published in its present form in the first edition of this work, since which period, an old mode of dividing strictures, probably with some improvements, has been revived by Mr. Stafford. Wherefore in a work of this kind, it is necessary that I should mention it, together with the cases to

which it appears applicable. About thirty years since, Sir Charles Blicke of St. Bartholomew's Hospital, and Mr. Nayler, of Gloucester, employed a lancetted catheter for the division of strictures. Whether Sir Charles subsequently relinquished the practice I know not; but Mr. Nayler did, in consequence of finding that the plan was followed by hæmorrhage. This induced him to desire his instrument-maker not to recommend the instrument, as the circumstance just mentioned had led him to disapprove of it. M. La Faye seems to have also adopted this method. I am not aware that he has written any thing on the subject, but the reader will find a lancetted catheter figured in the surgical part of the Encyclopedie Methodique, under the appellation of the "Sond a dard" of La Faye. Mr. Stafford has revived this mode of treatment, and continues to be well satisfied with it. In order to judge accurately of the distance, and thus the situation of the contraction, Mr. Stafford, like Du Camp, uses a graduated instrument, the distances being marked on it. His mode of proceeding is cautious. I will give his directions in his

own words, premising that he proceeds differently according as he has to divide an impermeable stricture, or one which yet admits an instrument of small calibre. "Before using the instruments, the exact distance of the stricture from the extremity of the urethra should be ascertained. In the armed catheter, which is intended to divide strictures, over the wire which serves as a guide, the wire must be introduced through the stricture first. The mode of accomplishing this is by passing the smallest possible sized catheter, made to contain the wire, into the bladder. The wire, which is double the length of the catheter, and blunted at one end, so that it may not injure the bladder, is then pushed forward, and the catheter gradually withdrawn, by which the former is left in the canal of the urethra. The armed catheter is then passed over the wire until its point rests against the stricture, (which is known by means of the graduation,) and being held securely in such position, the handle of the stilette is pressed gently and gradually. As soon as any impression is made, the lancets should be allowed to retire into their sheaths, and the blunt

point of the instrument urged forwards. If it do not pass on, the lancets may be again used, as before. After the stricture is divided, the armed catheter should be withdrawn, and its place supplied by one of elastic gum of the same size. This should remain for a day or two to prevent the re-union of the divided parts, and to preclude the possibility of extravasation of urine, and on its removal a bougie should be passed twice in the week or as often as may be judged necessary, for some time; and the same treatment adopted as for stricture in general. The armed stilette, intended to divide impermeable strictures, must be used precisely in the same manner as the others, of course excepting the wire, which cannot be introduced. And the same directions for the after treatment are necessary for both.

I shall now briefly offer the remarks which suggest themselves to me on this mode of treatment; premising, that as I have had no experience with regard to it, I cannot strongly recommend it, still less can I impugn its capability of removing strictures. I therefore recommend those who are desirous of more

information, to consult Mr. Stafford's book, which is written with a candour, well entitling it to perusal.

It appears to me, that viewed as a practice for the relief of cases of ordinary, or even considerable severity, it is prima facie open to this objection, that it is operose and unnecessary: operose, because it implies the necessity of more or less confinement, which is seldom requisite; and unnecessary, because daily experience convinces me that almost all strictures are removable by other, and, if I may be allowed to say so, hitherto better established methods. Conducted in the cautious manner recommended by Mr. Stafford, I cannot say that I should entertain much apprehension of *extensive* hæmorrhage, yet we cannot hesitate to admit the possibility of such an occurrence after the experience of Mr. Nayler, when we consider that the puncture or incision is made in a structure naturally highly vascular, and generally labouring under considerable irritation—on the whole, I consider that this plan should be placed intermediately between the methods first mentioned in this treatise, and

the division of strictures as described in the last chapter; that is to say, that in a given case, where the caustic had failed, after a fair trial, and the division of the stricture was the only remaining resource, I think Mr. Stafford's plan should be first employed. In cases also of retention of urine, where every attempt has failed in carrying an instrument into the bladder by the urethra, I think that the lancetted stilette should be used previously to the bladder being punctured. In the latter case, we should be justified in running risks which it would be prudent to avoid under less urgent circumstances, since, should the plan succeed, we should have obviated the necessity of a very painful, and not unfrequently dangerous operation.

I may here add, that I know of one case in which a stricture of long standing having been removed by myself, the difficulty and frequency of micturition, in about two years, returned. The patient was about sixty years of age, and had enlargement of the prostate. I passed a No. 12 catheter into his bladder without difficulty, which shewed that the symptoms re-

sulted from the condition of the bladder or prostate, and not from stricture. I therefore recommended him to adopt such measures as were calculated to relieve irritation in these parts. As he was anxious to have something more done, he applied to Mr. Stafford, who used his lancetted catheter. In a urethra admitting already so large an instrument, it is not very clear what Mr. Stafford divided, neither could we expect, in such a case, that any measure directed to the urethra could be completely successful. I heard from the patient, however, a short time since, and he says that he can retain his urine for "two or three hours or more," and that he is much relieved since the lancetted stilette was employed.

CHAPTER XI.

RETENTION OF URINE.

The various causes giving rise to retention of urine might be divided into those which depend on the anatomical connexions of the urinary organs, and those which result from some peculiar condition of the organs themselves. When retention occurs from causes included in the last named division, it may result from a loss of power in the bladder to expel its contents, or from some obstacle impeding their exit when that power is exerted. The complete account of retention of urine would, obviously, involve considerations foreign to the object of this treatise; wherefore, I shall only speak of it as occurring in consequence of stricture. There is no point in connexion with the treatment of stricture that is more important, than the reten-

tion of urine by which it is occasionally accompanied; the first introduction to a patient frequently takes place at a time when he is labouring under this afflicting malady, and it is still further necessary that the surgeon should have well considered the most judicious means by which it may be relieved, because he occasionally produces it himself by the application of caustic to the stricture. In either case the cause is easily detected: for by inquiry we are informed that the patient has long been subject to greater or less difficulty in micturition, and, in short, that he has had, more or less plainly, the usual symptoms of stricture. It must be observed here, however, that although this observation applies very extensively, it is not absolutely without exception. A patient with stricture is never safe from retention of urine; for, however slight the stricture may be, or however little progress the symptoms may have made, it is possible that if the irritation in the urethra be suddenly increased, retention of urine may be the consequence. This may, of course, be effected in various ways; the most frequent, however, are

long journeys on horseback, immoderate indulgence in sexual intercourse, or excessive drinking. The symptoms of retention of urine, when it occurs under any of the circumstances above mentioned, in their general character differ but little; varying, however, in their severity. The distress experienced in consequence of the inability to make water, is very considerable; the inclination to do so being constant. If during the frequent and painful efforts to evacuate the bladder, a few drops of urine be expelled, their exit is attended rather by an increase than diminution of suffering, in consequence of the highly sensitive condition of the canal. There is pain in the region of the bladder, which viscus may be distinctly felt, forming a hard circumscribed tumour in the hypogastric region, sometimes extending to the umbilicus; it is also tender, on pressure. In some cases the pain extends to the loins and front of the thighs, and is accompanied by a sensation of sickness; the pulse varies considerably in different cases; sometimes it is hard and wiry, more frequently, however, it is increased in strength, fulness,

and frequency; the tongue becomes furred; there is thirst, and, indeed, the ordinary symptoms of pyrexia. The means, by which we endeavour to relieve retention of urine, have for their immediate object the removal of local irritation, and production of general lassitude. If no success attend the accomplishment of these objects, an attempt is made to draw off the water by the introduction of the catheter: the last named measure seems, at first, so immediately calculated to effect our object, that it is too common to find surgeons, when called to a case of retention of urine, thinking of little else than the introduction of the catheter; and in instances where other means are thought of, this frequently precedes their employment. There is no doubt that occasionally the urine may, in this way, be at once evacuated; but to recommend it as a general practice appears to me very absurd, and argues a very superficial consideration of the causes on which the malady depends. The obstruction to the flow of urine is seldom so perfect, but that a few drops occasionally are allowed to pass; and if it be so, it

does not result from the absolute closure * of the canal by the increase of the stricture, but from the irritation and spasm by which it is affected. What then can be more irrational than the immediate attempt to introduce an instrument, which is never accomplished even in health, without the production of more or less of these consequences? But, it may be asked, do the results of practice accord with the suggestions of reason on this point? I should confidently answer in the affirmative. Every one knows, that a practised hand may, in some cases, at once succeed in drawing off the urine; but, in the majority of these cases, I verily believe, that had the proper measures been employed, no

* I had occasion once to puncture the bladder in a man aged seventy-three, whom I did not see until four days had elapsed without a drop of urine having passed from him. He was in the last stage of exhaustion. The bladder was felt extending even above the umbilicus, and no instrument could be passed to a greater distance than about three inches. The evacuation of a very large quantity of highly offensive and turbid urine was productive of temporary relief; but he gradually sunk, and in about twenty-four hours died. In addition to a much thickened bladder, enlargement of the third lobe, and an abscess in one lateral lobe of the prostate, I found a body about the size of a large pea close to the enlarged third lobe. I could by no means pass any instrument through the strictured portion. The canal seemed absolutely closed for about the third of an inch.

instrument would have been necessary. As far as I have seen, the untimely attempt to introduce an instrument in severe cases of retention of urine, has not only been uniformly unsuccessful, but has very much increased the irritation on which the retention depends, and rendered the introduction of an instrument at the proper period, infinitely more difficult, and, in some cases, impossible. I have seen many cases, where no instrument could be introduced, relieved by the judicious application of means presently to be mentioned. It is difficult to see any reason for the practice which I have endeavoured to reprobate, since there is no danger in waiting two or three hours, which will be sufficient for the institution of the proper practice. The bladder will contain a large quantity of urine:* it may ascend as high as the umbilicus, and yet no instrument be necessary for its evacuation. I should not have said so much on the early introduction of the catheter, had I not known that this injudicious practice is still pursued by men who are otherwise intelligent

* Sabatier has recorded a case in which the bladder contained eighteen pints of urine.—*See Médecine Opératoire.*

practitioners. Nothing is more easy than to learn the catalogue of remedies for any individual disease, but that which constitutes good surgery is the knowledge of the particular periods at which they should be successively employed. Returning, then, to the indications, and the proper means for their fulfilment. I proceed to describe the treatment; and first, of the removal of local irritation. The application of leeches or cupping to the perineum is very useful in attaining this object; and, as the warm bath should always be administered, the blood may be abstracted whilst the bath is being prepared: if leeches are used, ten or twelve is the number I usually employ. As the warm bath cannot be procured on all occasions, the semicupium may be substituted, and while the patient is sitting in it, he should be kept warm by blankets thrown around him. The degree of heat should be about ninety-five degrees, which is not more than comfortable warmth. General blood-letting is occasionally recommended, and in full robust habits eighteen or twenty ounces may be abstracted with advantage. Usually, however, this is an expensive

remedy as regards the general system, and the local advantage derived is as easily procured by other remedies. It is of great consequence to procure speedy and copious evacuations from the bowels; indeed, no point is of greater importance. I have seen many instances where obtaining these produced immediate relief, in which all the other remedies had been unsuccessfully employed. Nor can we be surprised at this, when we consider the sympathy that exists between the lower portion of the alimentary canal and the urinary organs.

In administering purgatives in these cases, it is better to give a full dose at once, as our object is to procure their operation as speedily as possible; and for the same reason, I prefer calomel and jalap, (in the proportion of three grains of the former with a scruple of the latter) to any other medicine. At the same time enemata, composed of thin gruel and castor oil, may be used with advantage. Opium is recommended in cases of retention of urine, in consequence of its allaying irritation and excitement. I am no great advocate for its employment; because, firstly, it interferes with the action of the pur-

gative; and, secondly, the same effect can be produced by other means, which are not liable to the same objection. I now allude particularly to the antimonium tartarizatum: and although the aforementioned observation is not strictly correct (inasmuch as the effects of opium and antim. tart. are not identical), yet those resulting from the use of the latter are much more beneficial. This has to me appeared a valuable medicine in all cases, either where not a drop of urine can be expelled, or, as occasionally happens, where a little dribbling follows the administration of the other remedies, and the introduction of the catheter be still found impracticable.

All the effects produced by the antimonium tartarizatum have an advantageous tendency. It produces lassitude; and although absolute sickness is to be avoided, yet, should it occur, the prostration of strength will be more considerable. The profuse diaphoresis which it occasionally produces, is also desirable; since the secretion of urine usually goes on much less rapidly, and thus the bladder will not be so readily re-filled, should any urine be dribbling

away, or, if otherwise, the quantity which it contains will not be so likely to receive any addition. The manner in which I have usually given the antim. tartar. has been in warm water, in the proportion of about the half of a grain every twenty minutes or half hour. The quantity, however, has varied considerably; that which I have mentioned is the average. I have sometimes given it with the calomel and jalap, but usually have allowed a little time to elapse between, for fear of producing sickness.*

Should the foregoing plans prove unsuccessful, the surgeon should endeavour to introduce an instrument. On this occasion the silver or varnished catheter may be used indifferently: I have generally employed the latter, because it has appeared to produce less irritation than the silver instrument. The size of the catheter will, of course, necessarily be small; yet, as it

* Lest it should seem that I undervalue the power of opium in relieving irritation, I would here observe, that I do not recommend its use in ordinary cases, because there generally exist contrary indications, the fulfilment of which usually render the opium unnecessary, and with which the opium interferes. Where the bowels have previously been powerfully, but unsuccessfully evacuated, a full dose of opium, that is to say, about fifty or sixty drops of laudanum, will, in some cases, be found successful in relieving the irritation, which produces the retention.

is impossible to know how much of the contraction depends on irritation, it is desirable to use as large an instrument as the stricture is capable of admitting. For this purpose, the magnitude of the instrument employed should be determined by the volume which the patient describes his stream to have ordinarily been before the attack of retention. As the urethra is always in a highly sensitive and irritable condition, it is essential that the greatest gentleness should be observed. With regard to the mode of introducing the catheter, I have little to add to that which has been said before. If, however, after we have arrived at the stricture, the instrument be impeded, it should be remembered, that it is of great consequence to pass the point into the stricture, so that the eye of the catheter, as it is termed, be beyond the obstruction. In a case where I was fortunate enough to accomplish this, the puncture of the bladder was certainly prevented; all the usual remedies had been employed, the symptoms were very severe, and the instruments for opening the bladder were in the room; when, previously to withdrawing the catheter, I gave it a

kind of rotary motion, compared by the French to that usually given to a gimblet, urging it gently forwards at the same time: it now passed about the fifth of an inch further, and the urine instantly began to dribble away. In this case, the bladder had lost its power from over distension; and a great deal of trouble was necessary to evacuate it, by pressure in the hypogastric region, which, however, was eventually accomplished. In some cases, passing the point into the stricture, and thus opening it, as it were, is successful, the urine flowing immediately that the catheter is withdrawn. In all cases, when the urine is evacuated, the most rigorous adoption of all measures calculated to prevent the recurrence of irritation should be enjoined; the patient being confined to his bed, the warmth of which is highly beneficial. The consequences of retention of urine, where it is not relieved by these remedies, or puncturing the bladder, will be presently described.

In conclusion, I must say a few words on the use of tobacco, which has been recommended for the relief of this complaint. Mr. Earle has written a paper, in the sixth volume of the

Medico-Chirurgical Transactions, extolling its efficacy, and indeed giving examples of its successful administration. The well-known effect of this poison, when given in clyster, is certainly in conformity with those which we wish to produce by other means; how far its use may supersede that of remedies more commonly employed, when its powerful and occasionally alarming effects are considered, my experience does not enable me to determine. Its superior advantages ought certainly to be well attested by repeated trials, before it can be employed in common with the measures usually recommended. I certainly have seen it successful in one case; but in candour it must be observed that, in this instance, the usual practice had not been fairly tried. My present impression, however, is that the tobacco should be tried only where all other plans have failed, and where we have no other resource left than puncturing the bladder.

CHAPTER XI.

OF ABSCESSES AND FISTULÆ IN PERINEO, &c.

Abscesses in perineo are either simple or urinary.* The former appear to result from the irritation in the urethra being communicated to the surrounding fat, or cellular tissue, and there producing inflammation. Thus, matter may form in connexion with irritable urethra without stricture. When this happens, the abscess is simple in the majority of cases; but I think there are exceptions. I had recently under my care a young man with a urinary fistula in perineo, in whom examination of the urethra did not discover the slightest vestige of stricture. It might be said, that in this case the ulceration of the urethra had included the

* I mean, that they may either contain pus alone, or both urine and pus.

stricture; and this might certainly have happened, but I am rather disposed to the opposite opinion, because he never had any symptoms of that complaint. Irritable urethra will induce symptoms and consequences almost as multiform and varied as stricture; and, indeed, many of those by which the latter is accompanied do not result so much from the mechanical obstruction it occasions, as from the irritable state of the canal with which it is connected. As a further illustration of this view, I may mention, that we frequently meet with sores on the penis, which are rendered exceedingly obstinate by a co-existing irritable condition of the urethra. There can be little doubt that they are the consequence of this state of the canal; since it is immaterial, in a practical point of view, whether they are directly produced by the disorder of the urethra, or indirectly in consequence of an increased susceptibility of the affected parts, depending on their sympathy with the urinary canal. I have endeavoured, by repeated and accurate observation, to ascertain if there was any particular character by which sores thus occurring could be distinguished from the

various and dissimilar ulcers which are occasionally seen on the penis. I am sorry to add, however, that my endeavours have proved unsuccessful; for the characters of them have varied in so many points, that I cannot point out any practical directions by which they may be recognised with certainty. The only circumstance in which they have resembled each other is, that they have been in my experience generally superficial, and do not, in the majority of cases, deepen like many others which occur on the genital organs. From the syphilitic ulcer they may, indeed, be readily enough distinguished, even by their negative characters; not possessing one of those which especially characterise the specific sore.* The means by which we are most readily made acquainted with the cause on which they depend, are drawn from the history of the case; for although they so readily get well on our relieving the irritation

* The reader will understand that I only here speak from what I have myself seen. I would have entered more fully into the consideration of this subject, had not the observations which Mr. Abernethy has published, rendered it unnecessary. Mr. A.'s works are so universally read, that I need scarcely refer to the first volume; article — Diseases of the Urethra.

in the urethra, this is so essential a condition to their removal, that it is always exceedingly difficult, and, in general, impossible to effect it on any other terms.

Returning, however, from this digression to the more immediate object of this chapter, it should be observed, that abscesses may occur at any period of stricture; though it must be confessed, that they more commonly happen at an advanced stage of the disease. The difficulty in voiding the urine, and the irritation by which it is accompanied, produce ulceration of the urethra, and generally posterior to the stricture. The urine consequently becomes effused into one or other of the situations mentioned in Chap. iv., but most frequently into the cellular tissue of the scrotum and perineum. Whatever be the situation, the presence of this irritating fluid, in parts not designed to be in contact with it, is productive of violent inflammation and sloughing. If the case be neglected, the skin speedily becomes affected by these processes, assumes a livid dusky-red colour, and, on its sloughing, an exceedingly fetid mixture of pus, urine, and sloughy cellular tissue, some-

times discoloured by a little blood, is discharged. The extent of the mischief may be, however, much limited, if the surgeon is a judicious practitioner. A moment's consideration will shew him, that urine, effused into such a quantity of fat, cellular tissue, and aponeurotic fibres, as exist between the integuments and deep-seated parts in the perineum, must inevitably produce the consequences above described. It is obvious, that the effect of these consequences must cruelly and unnecessarily prolong the sufferings, and delay the recovery of the patient. The instant, then, that urine is known to be effused, it should be discharged by a free incision; in executing which, boldness is occasionally as necessary as promptitude. In the generality of cases, it is true, the extension of inflammation is so rapid, that the extravasion is discoverable by the appearance of the skin which I have mentioned. In some instances, the only external indication consists of a slight tumefaction in the perineum. This may result from the unusual quantity of fat, &c. in the perineum, or perhaps from the opening in the urethra being of small size, and

the quantity of urine effused less considerable. The swollen part, however, is very tender, and the extravasation of the urine is further evinced by deep-seated pain in the perineum. This is increased by any attempt to make water; very little, and sometimes none at all, passing by the natural channel. By attention to these circumstances, the surgeon will rarely make a cut unnecessarily; but if, in an obscure case, he should happen unfortunately to do so, it is incalculably of less consequence than hazarding the results which must necessarily follow on the confinement of the urine in its unnatural situation. In this case it will sometimes be necessary to go the depth of a common abscess lancet before the contained matters are evacuated. Should pus only be let out, it fully warrants the practice, which in this respect does not differ. I am here prepared for a difference of opinion, because abscesses have sometimes formed in perineo, and again dispersed; but we cannot in general hope for any such favourable result. When the urine, pus, &c. has been evacuated, the patient should be kept perfectly quiet, and a large poultice

applied to the part affected. The most prompt and judicious treatment will not always prevent the abscess from terminating in fistula, since the cause of both is found in the stricture. Sometimes the urine becomes infiltrated into other situations; more abscesses form, thus giving rise to other fistulæ. In this state of things the condition of the patient is truly deplorable. The pain, whenever he makes water, is at first distressing; and even when, from the duration and subsequent alterations in the structure of the fistulous tracks, it becomes less considerable, he is constantly annoyed by the whole or greater part of the urine being voided through the newly-formed passages. The treatment by which he is to be relieved is obvious. Nature has always a tendency to assist us in relieving diseases, provided those circumstances which have a direct influence in retarding her salutary operations are removed. Even where this cannot be, or is not accomplished, some change in general is wrought, contributory to the comfort of the individual. This may be illustrated by those which occur in old fistulæ, where the urine passes through a

canal, in a degree defended by a secreting membrane. The treatment then consists in removing the stricture; for, in proportion as we restore the canal of the urethra to its natural condition, so will the urine (passing where it meets with the least resistance) flow through the natural passage, and the fistula become closed. In those instances which have occurred in connexion with absolute retention of urine, or in which the stricture is exceedingly contracted, the small varnished catheter will at first be particularly useful. The French manufacture these instruments in general of a much smaller size than the instrument makers in this country; they were also much better; but of late the English catheters have been much improved, and may, I believe, be procured equally small if ordered. In public institutions, however, the expense of them is an object; wherefore to those who may be interested, I may observe, that the French catheters may be procured very good at M. La Fond's, 46, Rue Richelieu, and may be obtained thence by letter, on paying an *ad valorem* duty on their arrival in London.

In employing a very fine catheter, if a stilette be used (and it will generally be necessary), care should be taken that it be not too large, otherwise the eye of the instrument, as it is called, will be broken. Having introduced a catheter into the bladder, a question arises as to whether it is better to allow it to remain, or introduce it again at intervals: practitioners have differed on this point; some conceiving that the permanent residence of an instrument presented a greater security from the urine passing through the ulcerated aperture in the urethra; while others have thought that the irritation resulting from the constant presence of the instrument, is exceedingly prejudicial. In France the former plan is, I believe, almost exclusively adopted; in this country both are occasionally employed. The fact is, that there are cases in which one or other plan will succeed. As to my own opinion, I confess that, in the majority of cases, I consider the permanent residence of the catheter unnecessary, and, as it always produces greater or less irritation, therefore prejudicial. But as we ought always to remember that the urine will pass where it

meets with the least resistance, I believe that occasionally it may be better to allow the instrument to remain until the stricture has been in a degree removed. The cases to which I allude, are those in which the smallest instrument is passed with difficulty; and in these, the escape of the urine through the ulcerated aperture will be certainly rendered less probable by its always having a ready outlet by the catheter. As soon as the urethra, however, is rendered capable of admitting even a moderate sized instrument, I should certainly not allow it to remain, as I am convinced that the irritation it produces, is unfavourable to the healing either of the urethra or the fistula. As to the rapidity with which the size of the catheter should be increased whilst any is allowed to remain in the canal, it will vary with the kind and degree of stricture. The facility, however, with which this may be accomplished, and consequently the period at which it may be proper, will usually be indicated by a small quantity of urine escaping by the side at the same time that it is passing through the tube of the instrument. Formerly, surgeons used to

divide fistulæ in perineo, but in those which occur with stricture this division is useless and unnecessary; unless, indeed, it be a case in which the stricture be included in such division; and of the division of stricture, I have spoken in a preceding chapter. It may happen that in unhealthy subjects even simply purulent abscesses may form sinuses, and if they do, and are intractable by other means, there is no objection to their being divided; but this is altogether a different case from the fistulæ which I have been considering: in these, the cause essentially resides in the stricture, and on its removal, however accomplished, must the healing of fistulæ depend.

Before I dismiss the consideration of the consequences of stricture, it may be proper to say a few words on the treatment required, when this complaint has given rise to either inflammation or enlargement of the testis or hydrocele, or where the former has resulted from the temporary increase of irritation produced by the instrument. Both of these affections, as has already been observed, may equally result from an irritable condition of the urethra. With

regard to the first, rest should be enjoined, the part well supported and covered with a tepid bread and water poultice; this is in general far more beneficial than any cold application. Many surgeons apply leeches, and if the inflammation be vehement, there can be no possible objection to them: they do not, however, produce in general the benefit which might be expected, since they do not remove the cause on which the inflammation depends. There is no necessity for relinquishing altogether the use of the bougie during the time that the testicle is affected: its employment should, however, be repeated less frequently, and with more caution as to the observance of absolute rest, and every other measure calculated to prevent or remove undue irritation. As to hydrocele, there are so many cases in which the removal of the stricture is accompanied by that of the hydrocele, that any measures especially directed to the latter complaint should be postponed until the stricture is removed.

CHAPTER XIII.

ON STRICTURE IN THE FEMALE.

STRICTURES in women are by far less frequent than in men. This comparative infrequency is, I think, very intelligible. Mr. Hunter has very truly observed, that in proportion as an organ has a complexity of function to execute, so is it liable to disease. Now the office performed by the urethra in the female is simple, being confined to that of giving exit to the urine from the bladder; whilst that of the male assists in the execution of both the urinary and generative functions. It is thus exposed to a great many additional sources of excitement; and, by its intimate connexion with both sets of organs, its sympathies are proportionably extensive. Independent, therefore, of causes which exert a direct influence on the male urethra, it is sub-

ject to the indirect influence of many others, from which the female is altogether exempt. Further, it may be observed, that the structure and sensibility of the male and female urethra are different: the latter is much shorter and wider than the former, and ordinarily endowed with much less sensibility. It also admits of considerable dilatation with facility, which accounts for any contraction being so much more readily removed than it is in the male subject. The symptoms in those cases of stricture in the female which have fallen under my observation, have been very similar to those met with in men, except that they have not been so numerous or complicated; on the contrary, they wholly consisted of the frequent desire to make water, the difficulty in executing this function, and the distress necessarily consequent on these circumstances. The history of the cases has nothing very remarkable with regard to the treatment of them; I believe the removal of the stricture may be effected easily by dilatation, nor have I ever found it necessary to employ any other plan of operation.

As stricture in the female is comparatively

rare, and as some other affections which give rise to the symptoms which accompany it are common, I think it right to add a few remarks, as a caution which, although unnecessary to surgeons in general, may not be unacceptable to the young practitioner or student. Difficult, frequent, or painful micturition are not infrequently consequent on some affection of the uterus. It may occur during utero-gestation, or be produced by procidentia, prolapsus, and retroversion of this organ, as also by those diseases of it which are accompanied by alteration of structure. Disease of the rectum will occasionally give rise to the same symptoms. I have also seen the irritation consequent on those small vascular and exquisitely painful excrescences which occur about the meatus urinarius of the female, continued to the urethra and bladder, so as to induce symptoms of stricture, which have immediately subsided on the removal of them by the knife or repeated applications of caustic.

Case.—I was sent for to a married woman, when she was labouring under retention of urine. As I was not at home at the time, some

hours elapsed before I saw her; in the interval another practitioner had been called in, and had in vain endeavoured to introduce the catheter. The attempt was productive of considerable suffering, and the patient would not allow of its being repeated at that time. She gave me the following account of her complaint: About four years previously she had been affected by a discharge from the vagina, attended with considerable pain in the micturition; that on the subsidence of these symptoms she considered herself well, except that the urine did not flow quite so freely as formerly. The inconvenience she sustained was, however, very inconsiderable until about three months previous to her present attack of retention. From that time, however, her micturition had gradually become more difficult; it was also exceedingly frequent and attended with some uneasiness. Of late she has been obliged to rise six or seven times in the night to make water: the difficulty, though it varied, being always considerable. Although the catheter had not passed, as I before observed, it seemed to have been productive of some advantage, as

the urine was dribbling away, though only by drops. The usual remedies were therefore ordered, and I saw her again early in the morning. The warm bath, &c., had been beneficial, a considerable quantity of urine having passed. The bladder, however, was still felt distended. On endeavouring to introduce the catheter, the membrane over the meatus was found to be considerably thickened and plicated: and this change was continued a short distance within the vagina; nothing like a distinct meatus could be observed. On passing the instrument between the folds of the membrane formed in the situation of the orifice of the urethra, it entered easily to the extent of an inch; and examination by the finger in the vagina, clearly shewed that the catheter was in the urethra. All my endeavours, however, to introduce it into the bladder proved fruitless at this time; and I was therefore obliged to be content with exerting a certain degree of pressure on the stricture. The point of the catheter became so firmly embraced that I was enabled to secure it in this situation, and desired the patient to allow it to remain there, if its presence

was at all tolerable. The warm bath, or rather semicupium, was ordered to be repeated. The following day I again visited the patient: I found that she had only been able to endure the presence of the instrument half an hour; but the urine had since flowed more freely, and she was much more comfortable. I now succeeded in passing a small metallic sound without much difficulty, and the irritation it excited was very inconsiderable. My next four visits were repeated every other day; and at each I increased the size of the instrument, with one exception, when I was obliged to be content with introducing one of the same size as had been previously employed; the patient had become quite easy. Before the time appointed for my next seeing her arrived, I was sent for, as she again laboured under retention: she had been half an hour in a semicupium when I arrived; and as the bowels were freely open, I at once attempted and succeeded in the introduction of a fine French catheter; the parts, however, were exceedingly irritable. I should have imagined that this attack of irritation was consequent on the too frequent use of the instrument,

had it excited any particular irritation; but I am convinced that this was referable to other causes. I may here observe, that I should not have repeated the instrument so often but in consideration of the comparative small degree of sensibility which exists in the female urethra. The following day I found her quite comfortable, and advised her to avoid all sources of excitement, particularly that on which I conceived the present attack of irritation to depend. From this period the case went on favourably; the stream of urine gradually acquired its usual volume, and the frequency of micturition no longer existed; the size of the catheter was increased every second or third day, until a full-sized instrument entered the bladder with facility, when she felt herself perfectly well. This is now more than a year since, and I understand she has had no return of the complaint.

CASE I.

IRRITABLE URETHRA.

A gentleman, aged forty, applied to me, the latter end of the year 1819, for the relief of involuntary emissions. He had been much troubled with them some months previous to his application, and had on that occasion consulted a physician in the country. The plan employed by this gentleman, consisted of the cold bath, and the internal administration of bark, steel, and such remedies as are usually considered calculated to give strength. The benefit be derived from this treatment was, however, very inconsiderable, the emissions became less frequent, but never entirely left him; and at the time he applied to me, they were as frequent as ever. He now seldom passed a night without being awoke by a discharge of semen; his general health appeared very good, but on inquiring, he had the following symptoms:—Although there was no diminution in the volume of his stream in micturition, this

was more frequent than natural. He seldom passed a night without being obliged to rise once; there was a slight dribbling on his shirt after making water. His bowels were regular, but the evacuations were always accompanied by an uneasy sensation about the rectum. These symptoms induced me to suspect that his urethra was irritable; and as the involuntary emissions constituted the leading feature of the case, I thought it probable that the prostatic portion of the canal was especially affected. I communicated my sentiments to him, and proposed to examine his urethra; to which, after some hesitation, he consented. A large elastic gum bougie was introduced, and although he had never had any instrument passed before, he did not complain at all during its passage through that part of the canal anterior to the prostate. On the instrument reaching this situation, he became very uneasy, complained of heat, had a strong desire to make water, requested me to withdraw the instrument with great earnestness, and, in short, was exactly in that state which is so admirably described by Mr. Abernethy. As there was

nothing obviously wrong in his general health, he was merely ordered leeches to the perineum, to take an aperient medicine occasionally, with a pill of the extract of hyoscyamus and poppy, three grains of the former and two of the latter every night; and desired to call again in a week. During this period he had only two involuntary emissions. As the pill seemed to render the bowels rather costive, it was discontinued, and he was directed to be very careful in his diet, to confine himself to plain boiled food, and to refrain from wine and spirits. The next time I saw him the instrument was again introduced, and the irritation produced by its passage through the prostatic urethra, much less than at the former visit. Another week having elapsed, I again saw him: the improvement had not been progressive, as he had been thrice troubled during this interval with involuntary emissions. As these, however, were subsequent to a dinner party which he had attended in this interval, I simply passed a bougie, and recommended the continuance of the former measures. At the next visit he was much better, although he had been once awoke in the

night by a feeling of irritation in the genital organs; no emission of semen, however, having actually occurred: and the irritation at this time from the passage of the instrument was very inconsiderable. From this period no alteration was made in the treatment, the bougie was introduced a few more times, after intervals of a week, till he complained of no irritation in its passage. The involuntary emissions also entirely left him, and he was dismissed, perfectly well. He was under treatment for rather more than two months.

CASE II.

OF IRRITABLE URETHRA, WHERE THE MORBID SENSIBILITY PERVADED THE CANAL GENERALLY.

A young man, æt. twenty-three, was admitted into the Finsbury Dispensary with the following symptoms: About two years previously he had contracted a gonorrhœa, the more urgent symptoms of which complaint had subsided in the usual time. The discharge, however, had con-

tinued ever since; and of late had become very annoying, in consequence of a particular kind of uneasiness by which it was accompanied. This extended along the whole course of the canal, and was particularly distressing whenever he made water. His stream was very irregular both as to its shape and volume, and micturition had of late become much more frequent than natural. He was also often annoyed by involuntary nocturnal emissions. The usual remedies for the relief of irritation, &c., were ordered; and, after the lapse of a week, an attempt was made to introduce a moderate-sized bougie. The instant, however, that its point passed the orifice, he complained of severe pain —nevertheless the instrument proceeded slowly onwards, assisted by very gentle pressure; before, however, it had passed to the extent of five inches, he became sick and so faint, that I was obliged to withdraw it. I strongly recommended the rigorous adoption of measures previously ordered, repeated the leeches to the perineum, and kept the bowels freely open by magnes. sulph. in mint water, taken every morning fasting; suppositories were also intro-

duced into the rectum every night. At his next visit I succeeded without difficulty in introducing the bougie into his bladder. The irritation and pain, however, were so considerable, that I only allowed it to remain a few seconds. The introduction was repeated, after the usual intervals, and the metallic bougie used instead of the elastic gum instrument. The size was increased at each introduction of the instrument, until the largest passed with facility: he now felt perfectly well; the discharge, involuntary emissions, and other symptoms having completely disappeared. There was nothing further in this case of particular interest, except that the irritation was by far more considerable than in any other case which has fallen under my observation, where there was no stricture. His health was at first very much disordered, and the strictest attention to every point connected with that part of the treatment especially directed to the relief of local irritation, was particularly necessary throughout the progress of the case.

CASE III.

OF IRRITABLE URETHRA, WITH FISTULA IN PERINEO.

William Price, at twenty-four, applied for relief on account of a scalding sensation in micturition. On inquiry, he makes water very frequently in the day, but is not obliged to rise at all in the night. He is also troubled with involuntary emissions. There is a small aperture in the perineum, through which a portion of his urine is voided whenever he makes water: this has existed about ten weeks. From his description, the stream does not appear to have become much diminished in volume. The usual soothing measures having been premised, and the ordinary interval allowed, a large silver catheter (No. 10) was pased without difficulty into his bladder, but at the same time was productive of considerable pain and irritation. An instrument of increasing size was re-passed at intervals of a week, and at the latter period the urine had entirely ceased flowing through the fistula. At this time I lost sight of the patient

for a fortnight: on his revisiting me, he informed me that he had been unusually busy in his employment as a waiter, had kept very late hours, and that the urine again flowed through the orifice of the fistula. He was again ordered leeches to the perineum, desired to remain quiet, and to come again in three days. I was now enabled to repass No. 12 without difficulty, but the instrument gave him more pain than at any former period: the leeches were repeated. After another week, I again saw him; the irritation excited by the former instrument continued for nearly three days; it had, however, now entirely subsided, and I introduced No. 13 without difficulty, neither did he experience any particular uneasiness. The urine had again ceased to flow by the perineum. No. 14 was passed twice, after the usual intervals; at which time the orifice in the perineum was completely healed, and the patient otherwise perfectly well.

CASE IV.

OF SORE ON THE PENIS, DEPENDENT ON AN IRRITABLE CONDITION OF THE URETHRA.

A young man, æt. twenty-six, of sedentary habits, applied to me for a sore on the penis. On referring to my notes, I find the following description: A superficial sore having a smooth secreting surface, not deepened by ulceration, and surrounded by an erythematous blush of a crimson colour. He says, that he has taken pills by the advice of other practitioners, and applied various local applications without any benefit; that the sore has existed fifteen months. He complains of uneasiness in making water, and is troubled by involuntary emissions generally thrice a week. His stream is irregular in volume, and he has occasionally pricking sensations in the testes. His tongue is furred, his appetite deficient, and his bowels torpid, which he has endeavoured to obviate by occasionally taking aperient medicines. The usual remedies were ordered, and the pil. hyd. noct. alt. given as an alterative; equal parts of ung.

hydr. nit. mit. and cerat. cetacei recommended as a local application. At the expiration of twelve days he again visited me, and expressed himself as feeling a little better; on inquiry, however, there was no perceptible difference in his symptoms, and the appearance of the sore remained the same. I now introduced a large bougie into the bladder; the urethra was very sensitive, and the instrument was impeded for a second or two at the membranous portion; it, however, quickly passed on, assisted by very little pressure. The same treatment was ordered to be continued. At his next visit he was much better: the sore had already healed in great part, the stream had become larger and more regular: the involuntary emissions continue, as well as the unpleasant sensations in the testicles; the latter, however, are less troublesome. The introduction of an instrument was now repeated, at the usual intervals: and when it had been passed three times, the sore had entirely healed. The urethra, however, still retained in a degree its morbid susceptibility, and the involuntary emissions occasionally occurred. The solid metallic sound was now

substituted for the elastic bougie, and when it had been introduced six times, all irritability had subsided. The involuntary emissions, however, still returned about every ten days, and as he was very anxious to be relieved from this annoyance, various measures were employed; amongst other medicines he took camphor, laudanum, and hyoscyamus, he had also a seton passed in the perineum. Nothing that was subsequently done, however, seemed to influence the recurrence of the involuntary emissions, which returned at intervals. As he had no other inconvenience remaining, and as his health was evidently still disordered, he was recommended to go into the country. I have since seen him, and learnt that this was highly beneficial; but that, although the intervals are much longer, he is not altogether exempt from occasional returns of his old complaint.

I have been induced to mention this case, in consequence of the young man having described his anxiety on account of his complaint, to result from the circumstance of his having taken so much medicine and applied so many local remedies, without the least influence having been produced on the sore.

CASE V.

The following is a good specimen of an ordinary case. It also shews, that the symptoms may be very severe where the contraction is not very considerable.

George Clark, æt. fifty-five, admitted with the ordinary symptoms of stricture, which commenced about two years ago with a trifling difficulty in voiding his urine. His greatest annoyance, however, results from the straining which accompanies micturition, and the great frequency of his calls to make water, being obliged to execute this function almost every hour. It is only during the day, however, that this irritability of the bladder is so remarkable; for although he is obliged to rise so frequently in the night as to interfere with and sometimes destroy his rest, yet micturition is comparatively much less frequent. His tongue is furred, appetite indifferent, and bowels costive. He was directed to employ the usual preparatory measures, and to introduce a suppository the night previous to the morning on which it was

proposed to examine his urethra. On again seeing him, the bowels had been freely opened, and the suppository had given him a good night's rest. Regulating the size of the bougie by the considerations I have mentioned, I introduced one of moderate size into the bladder; but it did not readily pass through the membranous portion of the urethra, its progress being here interrupted by a stricture.

April 7th.—I varied the size of the instrument, and employed the silver catheter. Patient already makes water less frequently.

14*th.*—Urethra would not admit the next size. Stricture was rather sensitive, and bled a little.

21*st.*—Applied kali, after again attempting to introduce the last sized instrument.

28*th.*—I again failed in introducing the instrument, and accordingly re-applied the kali.

May 5th.—Patient is much better. Stream larger, and micturition very much less frequent. I attempted the introduction of a catheter a size larger than the one I had failed to introduce, and it passed into the bladder without much difficulty.

May 12*th*.—The irritation consequent on the last introduction has been considerable, attended with an increase of difficulty in micturition. It has not yet completely subsided, therefore the repetition of the instrument is deferred. Ordered eight leeches to the perineum, with the continuance of the other measures, and absolute rest enjoined.

15*th*.—The attack of irritation had quite subsided, and the instrument the next in the scale introduced without difficulty.

At his next visit the symptoms were almost entirely relieved. He only rises twice in the night, and scarcely makes water (during the day) more frequently than natural. No further interruption occurred in the progressive introduction of the larger catheters. No. 14 was introduced thrice, and the patient discharged, perfectly well.

CASE VI.

OF THAT DESCRIPTION IN WHICH I EMPLOY THE KALI PURUM.

Anthony De Paer, æt. forty-two, applied for relief at the Finsbury Dispensary, with the following symptoms:—Has great difficulty in making water, attended with a burning sensation along the course of the urethra; his stream is exceedingly small, and micturition very frequent; he is much disturbed at night by a perpetual desire to make water, and when he goes to sleep the urine passes from him without his being conscious of it. His complaints have existed for about two years, during which time they have been gradually increasing in severity. Leeches are ordered to the perineum, his bowels directed to be freely opened by calomel and jalap, fomentations night and morning, suppositories of opium and hyoscyamus introduced at night into the rectum; and he was desired to apply again in a few days. A small elastic gum bougie now passed readily down to the membranous portion of the urethra, where its progress was opposed; on reaching this point,

the patient complained of acute suffering. The instrument, however, was steadily held for a minute or two against the stricture; the pressure exerted being very inconsiderable, indeed, not greater than was necessary to keep the point of the bougie fairly in contact with the obstruction. Its further progress, however, being still prevented, it was withdrawn, and a considerable quantity of blood followed its removal. The leeches, &c., were repeated, mild diet recommended, and as much rest as his avocations allowed strictly enjoined. After the lapse of a week, however, his symptoms were but little alleviated, and the same circumstances again occurring on the introduction of an instrument, the kali was applied. The pain experienced was not greater than that felt from the contact of the unarmed instrument. At his next visit, no instrument could be passed into the bladder, and although the pain and hæmorrhage again took place after the removal of the bougie, yet the latter was much less, and the former by no means so considerable. The kali was again applied, and the second application in a few days was followed by a complete subsidence of

the unusual sensibility of the stricture, and a small bougie was introduced without much difficulty into the bladder. It was necessary to use the kali three times more in the progress of this case; after which period No. 5 could be passed into the bladder, and the symptoms were very much relieved. Nothing after this interfered with the introduction of a larger instrument at each visit, until No. 10 was introduced. At this period the patient felt himself so completely recovered, that he very imprudently discontinued his attendance, without giving me an opportunity of warning him against the inevitable consequence—the return of the stricture. This is, indeed, too common in Dispensary practice, it being difficult to persuade patients that there is any necessity for the continuance of treatment after the symptoms are removed. The first application of this patient was on the 2d of January; he continued under treatment till March. In the following October I again saw him, and he complained that all his symptoms were nearly as bad as ever; the only exception being that of his urine not passing from him during the night involuntarily. After the

employment of the preparatory measures, I succeeded in passing a small catheter into the bladder; I had, however, much difficulty in accomplishing this, although the peculiar sensibility had not returned, but the stricture seemed to be on one side, and the instrument would not pass unless the handle was inclined to the right side of the patient: and even when it did proceed, there was a sort of jerk, as if it passed over a fold of membrane. After the usual interval, I attempted to introduce a larger instrument, which I succeeded in accomplishing, but not without much time and trouble, the same sensations being conveyed by the catheter as on the former visit. Not being able, however, further to increase the size, at the next visit I took an impression preparatory to the application of the kali, which impression I am certain resulted from one of those bridles which I have described as occasionally being thrown across the urethra.* The kali was applied,

* I met with an excellent specimen of this only a few days since, in a man who had been the subject of stricture, but who died of an intussusception combined with other disease in the rectum. On examining the urethra of this individual, I found that the canal was

and a piece somewhat larger than a pin's head selected. This application of the kali enabled me, after the usual interval, to introduce a larger instrument without difficulty, but it was necessary to incline the handle to the right side; so that, besides this membranous band, which was probably removed, there was a stricture, the aperture through which was not central. From this period the case went on favourably; the size of the instrument being increased, until the largest catheter passed into the bladder with facility.

This is now more than a year ago. I meet the man occasionally in the street, and he informs me he has no return of his complaint.*

contracted in two situations, and that at one part there was a distinct membranous frænum growing from the mucous membrane across the canal. I may observe, that similar morbid appearances are observed in the trachea of horses commonly called "roarers."

* Since this case was first published, this man has been again under my care; but I have ascertained that he is much addicted to ardent spirits, and is often seen intoxicated in the neighbourhood of the Dispensary as early as one o'clock in the day.

CASE VII.

BEING ONE OF THAT DESCRIPTION IN WHICH I RECOMMEND THE USE OF THE ARGENTI NITRAS.

The case which I am about to relate, as an instance where the argenti nitras appeared useful, also shews the plan which we are generally obliged to adopt where there are already two or more strictures. I would observe, that where it is practicable it is always advisable to direct our principal attention to that which is posterior. But in cases where caustic is necessary, this is frequently impracticable, before the greater or less dilatation, or destruction of the anterior one is effected. The latter may allow an instrument to pass three sizes larger than that which the posterior stricture is capable of admitting, and yet we may not be able to pass even the smaller size through it with sufficient celerity to apply the caustic effectually to that which is most remote from the orifice of the canal; wherefore we may be obliged to continue our applications exclusively to the anterior stricture, until this difficulty is removed.

John Miller, æt. thirty-eight, applied to me with the following symptoms:—He makes water more frequently than natural; the frequency is not, however, so distressing as the great straining with which his efforts to void it are accompanied. He cannot, however, hold it even for a few minutes when the desire to void it occurs. There is no pain in micturition. Soothing measures were employed for a few days as usual. On examination I found that he had two inguinal herniæ, and that a very fine bougie could be with difficulty passed into his bladder. On attempting, at the next visit, to pass a larger instrument, it was stopped by a stricture at about four inches, to which I immediately applied the kali purum. At the next visit, the instrument last used was allowed to pass, with some painstaking, to about the membranous portion of the canal, but could not be introduced further: as the obstruction anteriorly however detained the instrument a few seconds, the kali was again applied to this situation. In a few days after this, the bougie passed readily to the posterior stricture; to which kali was twice applied, the intervals being, as usual, a

week. A small silver catheter at the subsequent visit was passed into the bladder, and considerable relief followed its introduction; the man expressing himself much more comfortable at the next visit. The successive introduction of silver catheters was now employed in the usual manner, until No. 6 passed pretty freely; No. 7, however, could not be introduced, although kali was applied several times to the posterior stricture, which was the seat of obstruction. I should here observe, that throughout the whole treatment, up to this period and for some little time afterwards, the strictures always felt exceedingly hard, and though as much force was used in endeavouring to procure a passage for the larger instrument as could be safely employed, the man never complained of pain: neither did he on any occasion when the kali purum or argenti nitras was employed. It was at this period of the case that the latter was first used; two applications of it to the posterior siricture enabled me to pass the larger catheter with great facility. From this time every thing went on favourably until No. 11 had been introduced. The introduction of No. 12,

however, was followed by a severe fit of irritation, and a kind of intermittent fever. Rest, with the local soothing remedies, however, relieved him from this, but not till after ten days had elapsed. Each instrument that was subsequently introduced, though the difficulty was by no means considerable, produced a new fit of irritation, for the subduction of which the same measures again became necessary; notwithstanding which I persevered until No. 13 passed with considerable freedom into the bladder, beyond which, as the patient's symptoms were entirely relieved, I did not think it expedient to proceed. He was desired to apply occasionally to have his urethra examined, but, as I have not since heard of him, I conclude he remains well. I believe in this man the membrane of the urethra at the posterior stricture had become considerably changed in structure.

CASE VIII.

Thomas Youens, æt. twenty-six, was admitted into the Finsbury Dispensary, December 21st, with the following symptoms:—He has great pain in micturition; which is so frequent that he scarcely ever goes more than half an hour without being obliged to execute that function. Occasionally, however, he can retain his urine for three or four hours, and sleep a whole night without rising once; but more commonly he is obliged to rise five or six times, which annoys him considerably. He has had gonorrhœa, but it was some years since; and he now feels relieved by a discharge from the urethra, which occasionally takes place without any evident cause. His stream is very inconsiderable in volume, and occasionally the urine only flows guttatim. The usual preparatory measures having been employed, his urethra was examined with a fine bougie: which was opposed by a stricture at the orifice of the canal, and could not be introduced beyond this point. The kali purum was applied, which

gave him no pain, although he was very much disposed to faint during its application. A few minutes after the removal of the instrument he recovered from this feeling.

December 29*th*.—The bougie passes through the situation of the former obstruction, but is opposed by a stricture about half an inch posterior to it. Urethra bled freely, and he was seen again on January 5th, when the kali was re-applied.

January 9*th*.—A small metallic bougie now passed to the extent of about three inches, where its progress was opposed.

12*th*.—The kali purum was again applied to the last-named obstruction.

15*th*.—On examination, the instrument only passed three inches, no progress appearing to have been made in the removal of the obstruction; in this situation kali was again employed, also on the 19th.

23*d*.—The patient is much better since the last application of the caustic; micturition less frequent in the day, and has passed two nights in succession without being obliged to rise once. A small metallic instrument was now

passed with great difficulty into the bladder for the first time; during its passage it obviously had to encounter other strictures,—which allowed it, nevertheless, eventually to pass onwards.

The further account of this case in detail, would occupy some pages, and be exceedingly tedious to the reader; I shall, therefore, endeavour to give a short account of it by observing, that great difficulty occurred in increasing the size of the instrument, obstruction being met with sometimes in one situation and at other times in another; wherever the obstruction was, however, there was the caustic applied: the number of applications in all being fifteen. In the course of the treatment it was found that his urethra was completely beset with strictures; and, although they were not all continuous, yet I have no doubt that the intermediate spaces did not preserve the natural calibre of the canal. This was the most obstinate case I ever met with in so young a man, for he was under treatment about ten months. Indeed it was more than a year from the time I first saw him, before he was discharged; but the treat-

ment was interrupted for upwards of two months, by an illness which commenced, as I was informed, by an inflammatory attack of the chest: and for the relief of which, as his residence was very remote from mine, I procured him a letter in another Dispensary. The urethra, however, did not appear to have got worse, although, on the first introduction of an instrument, it was highly irritable. About two months before his discharge, an abscess formed in perineo, which I immediately opened; it contained nothing but pus, and the opening healed in a week. This abscess, however, was followed by a remarkable diminution in the irritability of the urethra, which nevertheless still retained in a degree its morbid susceptibility; leeches were frequently employed, as well as all the usual soothing measures, except rest, which he could not always enjoy, in consequence of being obliged occasionally to work for his subsistence. Whenever this did not prevent him, he strictly observed my instruction as to this point, and was otherwise so steady and obedient, that I felt great pleasure in endeavouring to relieve his sufferings. The

largest instrument eventually introduced was No. 13, which having been repeated a few times, he was discharged, perfectly well. His brother had occasion to call on me about three weeks since, when he informed me that the patient has had no return of his complaints. It is now more than eighteen months since I last saw him.*

CASE IX.

William Sheppard, æt. fifty, admitted a patient of the Finsbury Dispensary, in 1821, gives the following account of himself:—About twenty-three years ago, he was seized with retention of urine, having at that time a discharge after gonorrhœa. The surgeon of the ship, after many fruitless attempts, at length succeeded in passing an instrument (elastic catheter) into his bladder, which was allowed to remain for six months, being occasionally

* I have seen this patient within these few months, and he has no return of his symptoms, although nearly eight years have elapsed since he was under my care.

removed in order to be cleaned. At this period his ship was paid off, and he had a small elastic gum catheter given him, with directions to pass it occasionally; but he still made water with difficulty, and sometimes could not do so at all without previously introducing the instrument. In this state he continued for about two years, when by accident he received a blow on the penis whilst in a state of erection. The immediate consequence of this was perfect inability to make water, followed by effusion of urine into the cellular substance of the scrotum and perineum. In this state he procured admittance into an hospital in London. Two openings were made in the perineum, through which urine and matter were discharged: he now made water easily through these, but none came through the urethra. In a short time he left the hospital with three fistulous openings through which he voided his urine. Having lived in this miserable condition for a long period, he at length applied to Mr. Whately, from whose care he derived the following advantage:—All the fistulæ healed, and he was enabled to make water in a very small stream through the

natural channel. The treatment consisted of injections thrown up the fistulous tracks, and the application of the kali four times to the urethra. He had also small bougies given him, with directions to pass one occasionally. Though now much more comfortable than he had previously been, he was still in a very bad condition: calls to make water were very frequent; and the introduction of a bougie was frequently necessary in order to enable him to void it. This he could not always succeed in accomplishing, and when he did, it was never without great difficulty. In this state he was admitted into the Finsbury Dispensary. On examining his urethra, I found that the smallest bougie could not be introduced into his bladder. I succeeded, however, with much difficulty, in passing a very fine silver catheter, from which he experienced a little relief. As this man was many months under my care, a detailed account of his treatment would be unnecessarily tedious; I shall therefore condense it into as small a compass as I can, by observing, that his urethra was with great difficulty dilated, in the following manner:—Silver catheters were

used, until No. 3 could be introduced into the bladder: in order to accomplish this, it was necessary not to repeat any attempt after a shorter interval than six days, and also to repeat the introduction of one instrument twice or thrice before the introduction of one of larger diameter became necessary. The argenti nitras and kali purum were both repeatedly employed, in order to facilitate the progress of the case, but without advantage. The plan of simple dilatation was therefore alone trusted to, until No. 7 could be passed into the bladder: at this time the caustics were again employed, but again failed in producing any good effect. Up to this period the facility of micturition increased in proportion to the increasing size of the instrument employed. On introducing No. 8, the difficulty in making water returned, and twelve days elapsed before any instrument could again be introduced; and then it was two or three sizes less than that employed at the last visit. Notwithstanding these difficulties, the plan was persevered in until No. 11 was passed into the bladder. Finding, however, at this period, that the introduction of large instruments inva-

riably produced irritation and difficult micturition, and that the largest, the employment of which was attended with benefit, was No. 7, I decided on relinquishing the use of any other. I accordingly gave him a metallic sound of that size, which he continues to pass occasionally. I have the satisfaction to say that the man continues very comfortable, can retain his urine as long as persons who have no stricture, and voids it when called on without difficulty. I may remark that at no period did an instrument pass easily through his urethra; the resistance it encountered was always considerable, and it continued to pass with difficulty until it had traversed a portion of the canal of about two inches from that part at which the instrument was first obstructed; through this space it seemed in contact with something extremely firm and unyielding, after which it passed with considerable freedom. The difficulty of withdrawing it was always considerable, though much less than during the first part of the treatment. The time that the catheters were allowed to remain in the urethra varied: at first, even half an hour produced considerable increase of

irritation, whereas subsequently they were allowed to remain five or six hours with advantage. This case, abstractedly considered, would appear to be a very favourable one for the division of the stricture in the manner I have described; but when the condition of this man's health is fully considered, there are many circumstances which are prohibitory of an operation. His general health is but indifferent; his avocations deny him the advantage of rest for any lengthened period; he is very asthmatic; always breathing with difficulty, and this in cold weather is so great as to almost threaten suffocation; he is subject also to indolent yet obstinate ulcerations of the lower extremities, and has an inguinal rupture on both sides. Under these circumstances I have told him, that as he has nothing which renders him uncomfortable in the state of his urinary organs, he had better content himself with his present condition,—with which indeed he seems perfectly satisfied. I may observe, that Mr. Whately was induced to discharge him in consequence of his viewing the case as one not admitting of further relief. There can be little

doubt that this stricture is one where the urethra is for some space continuously contracted, and that the mucous membrane has undergone a considerable change of structure.

When these cases were first published, I could have added many others, proving the facts which they are intended to illustrate. Since that period my opportunities of so doing have been further multiplied. I have not thought it right, however, to enlarge the book by an additional number of examples. For, whilst one case, in connexion with the facts it is meant to establish, answers all the purposes of practical illustration, the publication of many to illustrate one point, is not only of doubtful utility, but in the minds of some individuals might render the motives questionable.

ON

STRICTURE OF THE RECTUM.

As I consider a protracted residence of fæcal matter in the rectum, always the result of disorder, and too frequently the precursor of disease, I venture to preface the practical part of this paper by a few suggestions, which appear to justify the opinion that it was never intended by nature that the fæces should remain more than a very short time in the lower bowel. The muscular power of the rectum is very considerable, and in the ejection of its contents receives the combined assistance of other muscles, ordinarily engaged in respiration. The large calibre of this bowel, instead of being designed as some have imagined, to provide for a certain accumulation of fæces, seems to me to have been given with a very opposite intention, viz. as affording a facility to their descent

through a situation, where, from the probable previous absorption of any nutritive fluids, their sojourn could no longer be useful. The course of the rectum, although not straight as its name would imply, is still ill adapted for the detention of contained matters, since our being able to retain the fæces sufficiently long for purposes of comfort and convenience, seems to have rendered the addition of a sphincter muscle necessary, which last point, may be rationally inferred, from the consequences invariably following the destruction of this muscle by disease, or the abrogation of its power by paralysis. The rectum is further endowed with a peculiar sensibility, which, although it does not render the residence of a considerable quantity of fæculent matter absolutely painful, still strongly solicits its discharge. Many other arguments might be urged in confirmation of the foregoing opinion, but as it would lead me to a discussion not quite pertinent to the object of this paper, I will only observe, that the accumulation of fæcal matter occasionally found in the rectum, where there is no mechanical obstruction, is no argument against the view

which I have taken, as it is invariably, (as I believe, at least) the result of disorder or disease. The mucous canals of the body generally possess a great facility of accommodating themselves to the contact of substances, to which they are not usually subjected; and it is on this principle that the rectum is brought to retain without any painful sensation, *a large quantity* of fæcal matter, for by degrees those solicitations for the evacuation of its contents, which were at first almost painful or imperative, become attended with so little inconvenience, as to be frequently preferred by individuals who are indolent or much occupied, to the exertion which a ready compliance with them renders necessary. I have no doubt that in this manner very large accumulations take place in the rectum, and that the distended bowel loses more or less of its expulsive power, exactly on the same principle as the distended urinary bladder; that this condition frequently induces the irritation which precedes its diseases, and explains the reason why females and those of sedentary habits, who are well known to be too inattentive to these calls of nature, are more

subject to diseases of the rectum than other individuals.* I am strongly impressed with the opinion that costive bowels, produced by negligence of these important points, are a cause of stricture of the rectum, as well as a consequence of that affection. Stricture of the rectum is most frequently found at the more advanced periods of life; it occurs occasionally in young persons, and no age is absolutely exempt from it. As I have already observed, it takes place more frequently in women than in men, and in persons of sedentary habits than in those accustomed to a proper degree of active exercise. The causes of stricture in the rectum may be divided into those which result from disorder originating in the bowel, those which depend on its juxta position to other organs, and into those which are derived from more distant sources, by sympathy or otherwise. With regard to the causes which refer to the rectum individually, I believe the irregular performance

* I am of course aware of the occasional influence exerted by the gravid uterus on the venous circulation of the rectum. The reader, by attention to the text, will immediately see that this does not explain the phenomena to which the sentence refers.

of its functions to be the most frequent, whether this be induced by a torpid condition of the bowels generally, or by that gradual accumulation of fæcal matter, which takes place in the manner to which I have already adverted. Drastic purgatives frequently produce great irritation in the rectum, and they exert a still more noxious influence when that bowel is previously disordered by accumulated fæces or otherwise. The causes which depend on its sympathy with, or juxta position to, surrounding parts, refer to disease or irritation existing in the urinary or genital organs. Affections of the urethra, prostate, and bladder of the male, or of the vagina, uterus, and bladder in the female, are capable of inducing disease of the rectum. A retroverted or otherwise altered position of the uterus, and enlargement of the prostate gland, in consequence of their anatomical relation, sometimes give rise mechanically to obstruction in the rectum, without producing disease. As the different divisions of the alimentary canal sympathize with each other, so any disorder of the stomach or bowels may be productive of irritation in the rec-

tum. Another set of causes originate in general repletion. A loaded condition of the circulation frequently oppresses the action of the heart, the pulse is labouring, restricted and feeble, and thus the blood not being freely sent forward, on its arrival at the right side of the heart, the venous system is thrown into a state of congestion, which ultimately affects its primary ramifications. In this way the veins of the rectum become loaded, burst, and form piles, and these, with the plethoric state of the rectum of which they are indicative, produce a degree of irritation very favourable to the occurrence of stricture. Should there be disease of the liver, at all impeding the circulation in that organ, plethora of the rectum is still more likely to happen, for reasons too obvious to any one who considers how the venæ portæ is formed, to require particular mention. In this way alterations of structure in the thoracic or abdominal viscera may, by the obstruction they afford to the circulation, produce disorder of the rectum. It is a subject of familiar observation, how frequently diseases of the chest and rectum are found in the same individual. I examined a

case very recently, in which an adherent pericardium and a narrowing of the left auriculo ventricular opening co-existed with abscess and hæmorrhoids. All causes then which produce an irritable condition of the rectum (as in the urethra) are capable of producing stricture. The irritation may indeed be primarily evinced by piles, abscesses, fistulæ, or prolapsus, which last may be sometimes rather called an intussusception. This takes place in the rectum where the irritation is remote from its orifice, and produces a very distressing, and ultimately fatal case. I gave Mr. Langstaff, some years ago, a good specimen of it connected with malignant disease, from an old man. The disease may be recognized by examination. A soft smooth mass is presented to the finger, which may be passed to a greater or less distance on each side of it; but the opening into the general cavity of the bowel will be found in the following manner. The tumour forms a somewhat irregular, inverted cone, and on its apex, which is towards the anus, may be felt a soft rounded process like a large papilla, denoting the aperture into the bowel. The only relief which I have been

able to afford in such a case, is obtained by the introduction of a varnished catheter, guided by the finger, and through this the injection of enemata. The catheter should be armed with a stilêtte sufficiently large to give it a fixed form, otherwise its introduction will be accomplished with difficulty. The most prominent symptom in this case, is the costiveness; in fact, no evacuation scarcely can be procured, unless by the means which I have mentioned. Purgative medicines should be avoided, for whilst they produce little or no discharge from the bowel, they appear to increase the length of the intususception. Morgagni mentions cases of a somewhat similar nature, and seems to think it probable that, in some instances, the inner membrane alone descends, being previously in a thickened condition.*

Examination of strictured recta presents one or other of the following appearances: there is always more or less thickening and induration. Sometimes the thickening cannot properly be referred to any specific disease; frequently it is

* "Non totum intestini corpus, sed internam dumtaxat tunicam relaxatam et crassam, factam se, se invertere atque exire." *Epist.* 33.

of a carcinomatous structure. It is either confined to a small space presenting an aperture, the edges of which are acute, which aperture may be of a rounded form or a mere slit, the bowel being free on either side of it, or the contraction occupies an inch or two, and there is a general thickening of the bowel apparently commencing in its muscular structure. To these appearances may be added ulceration of the stricture or bowel, or both. It is not uncommon to find the neighbouring surface of the bowel covered with firm flesh, like prominences such as might be supposed to result from hæmorrhoids, the blood of which had been absorbed. Piles and fistulæ not unfrequently exist in connexion with these appearances, of which there is a very fine specimen in the museum of the college.* The situation of the contraction is generally within reach of a long finger, sometimes higher, even to the extent of several inches. Strictures have been found in

* A morbid condition of the rectum has been mentioned by Mr. Copeland, from Portal, in which a folding of the inner membrane of the bowel takes place, obscurely representing a valvular structure. I am confident that I have felt this in the living body, but I have never had an opportunity of ascertaining it by dissection.

the sigmoid flexure of the colon, but they are very rare, and, certainly, those who fancy that they have removed strictures in this part, must, I think, have deceived themselves. Stricture *in* the sigmoid flexure appears to me wholly out of the reach of surgery; but if the contraction be *at* the sigmoid flexure, that is, at the upper extremity of the rectum, it is certainly accessible by a bougie. Patients labouring under stricture of the rectum but seldom present themselves for treatment with any idea of the real cause of their sufferings. Habitually costive bowels, or an uncomfortably lax condition of these viscera, piles, abscess, or fistula, are each in different cases the symptom, for the relief of which the patient first seeks assistance. In a few cases, the feeling of obstruction in the bowel has certainly occurred to the patient, but where this has happened in my experience, their attention to such a state of parts has generally been, in the first instance, excited by others. The history of the majority is generally as follows: the patient has been, for a considerable period, subject to costive bowels, in some instances from the earliest remembrance,

several days having occasionally elapsed without any alvine discharge; in other instances, although the calls to evacuate the rectum have been tolerably regular, or even daily, the discharges have been scanty, and unattended with that feeling of relief which follows a healthy performance of the functions of the rectum. A third class will say that their bowels have been particularly regular, and that they have habitually two or three evacuations daily. In this case, inquiry elicits that the bowel acts two or three times at short intervals, and that then the patient feels comfortable. In fact, that the proper evacuation is accomplished at three efforts instead of one. If the patient have examined the matter voided, and if it be of sufficient firmness to preserve a fixed form, it will be found to be of small circumference, or if its bulk be natural, its form will be more or less flattened. Occasionally, however, nature, as if desirous of obviating the difficulty in the expulsion of fæculent matter, pours forth an additional quantity of secretion. It would seem that the irritation of the stricture being continued to the intestines, excites their secretions, producing

frequent fluid evacuations justifying the term diarrhæa. This will again cease, and the ordinary characters of obstruction recur. As the case proceeds unrelieved, other symptoms are developed, the passage of fæces becomes painful, and the matters voided are of small size, and tinged with blood, or smeared with mucus, or the latter may be voided in considerable quantity alone, there is also frequently severe pain in the loins or back. I have also seen connected with stricture of the rectum, a quantity of membranous matter even taking a tubular form accompanying the evacuations. I have already mentioned the simultaneous occurrence of piles, abscess, and fistula, to which may be added a tender, excoriated, or ulcerated condition of the anus. The evacuations become attended with considerable pain, straining, and spasm, which in some cases produce acute suffering for many hours. A general affection of the health succeeds; there is loss of appetite, wasting, almost absolute obstruction, and the patient gradually sinks. In some cases, ulceration of the stricture and intestine takes place, and thus a communication with bladder or

vagina is produced. If the disease be malignant, the pain may be constant or intermitting; copious and very painful discharges take place. These, though often productive of temporary remission, are soon followed by renewed sufferings, which any attempt to relieve by the bougie almost certainly aggravates. Examination, in such cases, discovers a hard brawny condition of the bowel, and, however gently conducted, seldom fails to produce slight bleeding. As in such cases permanent relief is out of the question, spare diet and occasional injections of tepid or oleaginous enemata, alternated by opiates or suppositories, are the most efficient means of relief which surgery affords.

TREATMENT.

From what has been observed with regard to the causes of diseased rectum, it appears that a stricture of this intestine may be combined with some disordered function, or even structural alteration of the thoracic or abdominal viscera. The co-existence of diseased rectum, with affections of the chest and abdomen, has been

before mentioned, and its connexion with those of the liver and spleen, has been particularly dwelt on by the learned Morgagni. This renders it necessary to divide the treatment into the general and local, and although the latter will, for the most part, occupy the attention of the surgeon, yet, if he neglect the former, he will often find his topical measures unavailing or injurious. As an enlarged view of this part of the subject would necessarily involve the treatment of a variety of diseases, I shall only observe that the attempts to relieve any concomitant affection of the viscera must be conducted on the same principles as when occurring without any affection of the lower bowel, and that a good specimen is here afforded of the impracticability of drawing that line which many have thought necessary, between the departments of the physician and surgeon. The local treatment, like that of stricture of any other mucous canal, consists of the periodical introduction of instruments, preceded and accompanied by the employment of measures calculated to allay irritation. The former have for their object either dilatation, division, or

destruction of the stricture, by which last I mean the application of caustic. The cases which have fallen under my care have been one or other of the following varieties. The obstruction has either been the result of malignant disease, an intususcepted condition of the rectum, a stricture consequent on common thickening, relievable by the common bougie, or so near the orifice as to admit of safe division. I have, therefore, never had occasion to employ either metallic instruments or bougies armed with caustic. No doubt there may be cases in which the latter mode of treatment might be employed with advantage, but I can only speak of those with which I have been practically acquainted. I shall, therefore, at once describe the measures which are calculated to relieve irritation, and the circumstances to which it is necessary to attend connected with the introduction of a bougie. As the irritation is to be relieved precisely in the same manner as when the stricture is in the urethra, it will be sufficient to enumerate the principal agents which in different cases we employ for this purpose. The catalogue consists of the local abstraction of blood by leeches at the verge of the anus, or

cupping over the sacrum, blisters in the latter situation are sometimes of service; tepid emollient enemata, warm bathing, sitting over the steam of boiling water, occasionally a suppository, all likewise tend to diminish or relieve pain and irritation. It is desirable that the rectum should be kept as nearly as possible exempt from fæcal accumulations, and where the bowels have been previously cleared by mild purgatives, in conjunction with enemata of warm water or mucilage, the injections alone will be frequently found sufficient. Nevertheless, should it be otherwise, the aperient may be repeated, or the injection may be medicated by the addition of castor oil. If in a particular case the injection of warm water so often should appear to induce spasm of the bowel, once a day may be sufficient. In almost every case, the practitioner will find it advantageous to preface the introduction of the bougie by a mild aperient,* assisted at a proper time by

* With regard to the administration of mild purgatives, I may observe, that if the disease be already far advanced, they should be used with caution; nevertheless, it has appeared to me, that when thus employed, the aperient and the injection mutually assist each other in accomplishing a very desirable object, viz. the evacuation of the large intestines.

injections of warm water. Castor oil, manna, lenitive electuary, jalap, if combined with small doses of some aromatic powder, may be generally administered without causing irritation, provided always that the assistance of injections be added. In using the bougie, the same gentleness as is recommended in stricture of the urethra, should be observed, and the regulation of the size selected, should be guided by the same principle. In the majority of cases, the stricture may be felt by the finger, or is within a few inches of the orifice, so that a straight bougie will answer every purpose; but as in all cases it is desirable to ascertain the condition of the whole bowel, and as its course is curved, I prefer employing a curved instrument. The curvature should be a sort of general one, in which the whole instrument participates, the greatest convexity being described by a line bisecting the instrument, into equal lengths. An ordinary bow, half strung, gives, I think, a sufficiently accurate idea of the shape which I intend to convey, particularly if a very little additional curve be added to the point. I generally introduce the

bougie thus formed, with its concavity towards the pelvic side of the bowel, and, as it proceeds, carry its handle a little backwards, which enables the surgeon to prevent the point of the instrument from hitching at the projection of the sacrum. The introduction of a bougie into the rectum sometimes produces little or no inconvenience, provided it be done with great gentleness; at others, it is accompanied by pain or aching in the part, which continues for some time after it is withdrawn. Some patients also complain of uneasy sensations in the course of the transverse arch of the colon. With regard to the time which the bougie should be allowed to remain, the best rule is, to regulate it by the feelings of the patient, since, if it excite much pain it will do harm, whilst in the absence of any suffering, the longer it be allowed to remain (in reason) the better. I have seldom allowed more than seven or eight minutes at first, but have usually increased the length of time to a full hour, after two or three introductions. We shall seldom find it practicable to increase the size of the instrument with the same rapidity here, as in affections of the ure-

thra; on the contrary, it will be generally necessary, and almost always expedient, to introduce the same instrument twice or thrice before we employ one of a larger diameter, allowing an interval of two or three days to intervene. Here, as in the corresponding affection of the œsophagus, the surgeon must bear constantly in mind, notwithstanding the absence of those circumstances which I have spoken of as indicative of malignant disease, that the malady may be of a carcinomatous nature, and be especially careful that he do not rouse a comparatively dormant disease into a frightful activity. If the introduction of the bougie is to be successful, the patient will soon experience considerable alleviation of suffering. The symptoms more immediately indicative of obstruction will become less distressing, and if he have piles or fistulæ, which have been sources of pain, they will usually become less troublesome. The evacuations will either take place with the natural effort, or the bowels will be more amenable to those artificial influences which are employed to promote their action. When the full sized instrument is introduced, its use

should be occasionally had recourse to, to prevent the recurrence of the disease, and all those cautions which are calculated to guard against the relapse of any morbid condition of any of the viscera which may have preceded or accompanied the local affection, should be rigidly observed; and these it is the duty of the surgeon to explain. Sometimes the stricture may be felt by the finger, and if its whole length can be judged of, and the accompanying symptoms are fairly explained by the degree of obstruction which it offers, its division may be safely performed, and the patient happily relieved in a much shorter time than by any other method. The mode of accomplishing this is by the introduction of a common probe-pointed bistoury, or that recommended by Sir Astley Cooper for strangulated hernia. I have always employed the former. It should be introduced lying flat on the finger, against which it should be firmly pressed; this will avoid the risk of its injuring any parts inferior to the stricture. When the finger has reached the contraction, the edge of the bistoury should be turned towards the side on which we propose to divide, the instrument

being kept steady by the finger on which it has been introduced. As the hæmorrhoidal vessels frequently become enlarged under circumstances of continued irritation, it is better to divide the stricture by two or three very small incisions in different directions, than to accomplish its division in one. If the latter mode were preferred, a sacro-lateral direction would probably be the most safe; but as the practice above recommended will always effect the desired object, it should be preferred. As soon as the aperture be sufficiently enlarged to freely admit the finger, the case may then be treated by the bougie in the ordinary manner. I can confidently assert that this practice, adopted under favourable circumstances, has been productive of great and much accelerated relief, and that too in cases, in which, before the division of the stricture, bougies had made little or no impression. My friend, Mr. Kingdon, has also treated strictures of the rectum in this way with good success. Were it my object to speak of diseases of the rectum generally, I should have to shew, that as the irritation in the rectum which precedes stricture is attendant on piles, fistulæ,

abscess, &c., so may these diseases be productive of symptoms simulative of those characterizing contraction of the bowel. This was not my intention. I cannot, however, quit the subject without mentioning the irritable sphincter, the symptoms of which so much resemble those of stricture. I believe it to depend on irritation in the bowel. The sphincter in this case resists the introduction of the finger with considerable power, and the irritation in the bowel frequently gives rise to painful efforts to eject the finger or bougie when brought in contact with it. The case may be known by the opposition afforded by the sphincter, and by the rectum being free from contraction. Attention to the general health, mild and spare diet, with regulation of the bowels, including the use of enemata, are in general successful.

Where these measures fail, the passage of a bougie a few times may be added with advantage. I recollect no case in which their combined influence has failed in removing this affection.

ON

STRICTURE OF THE ŒSOPHAGUS.

Stricture of the œsophagus, contrasted with the frequency of its occurrence in the urethra, or even the rectum, may be considered a rare disease. Nevertheless, I have seen several cases of this afflicting malady. Like stricture of the other canals, it usually occurs after the middle periods of life, although there is reason to believe that occasionally a tendency to it exists at a very early period; and notwithstanding that the individuals who have presented themselves to my observation have been advanced in life, yet some of them have brought ample evidence that the disease commenced at

a much earlier age. Although the analogy in the structure of the mucous canals of the body is well illustrated by that which exists in their diseases; yet, the greater or less complexity of structure or function, give rise to certain modifications in their progress and frequency. As far as my observation has gone, stricture of the œsophagus is in general a much more insidious disease than when occurring in either of the other canals—at least, I have never known the latter mentioned cases so slowly developed. In some instances, even as much as twenty years elapse between the first remembered difficulty of deglutition and the application for professional assistance. I consider the difference easily explicable, on that which exists in the nervous susceptibility, functions and connexions of the several parts; but, as the practical utility of such a discussion is somewhat questionable, I proceed at once to the pathological conditions connected with this complaint. Stricture of the œsophagus may occur at any part of the tube; but as far as the cases which I have seen, or the preparations which I have examined allow me to offer an opinion, I should say, that

they happen most frequently in the upper half of the canal. It is not, perhaps, important, could we do so, to fix the precise point at which they occur most frequently, but it has appeared to me that about opposite the commencement of the trachea is the most frequent situation.

Examination of the strictured œsophagus presents various degrees of thickening of the tube. Sometimes a mere condensation of it, such as results from chronic inflammation; at others, the diseased part is hard, and when a section is made of it, it appears to be evidently of a carcinomatous structure. In some cases, the thickened portion is very small in extent, and the stricture marked by an acute membranous edge, such as would result from an imperfectly developed valvula connivens, only of a dense structure. I have also seen a fungous growth from the mucous membrane, narrowing its calibre so much as almost to render it impermeable. These appearances may be accompanied by ulceration, and this may occur either on the ORAL, or, more frequently, cardiac side of the stricture, which may be more or less involved in it, or otherwise.

The thickening may be an inch or two in extent, and there is one specimen in the museum of the college, in which nearly the whole tube is enormously thickened. A section has been made of it, and the diseased structure is seen interspersed by white fibrous lines, evidently those characterizing carcinomatous deposition.* There is one fact which has occurred to me, in reflecting on the various preparations which I have examined, viz. that where the alteration of structure is near the stomach, it is more frequently the consequence of specific disease, than when it is found in any other part of the canal. If this be so, the fact is important, as I shall endeavour to shew, in speaking of the treatment. The remote causes of stricture of the œsophagus are very obscure; in some cases, the first difficulty in swallowing is described by the patient as having succeeded to some catarrhal affection, but more frequently there is

* Sometimes the œsophagus, without any stricture, has been found dilated in a particular situation, so as to form a large pouch on one side of its usual course. There is a specimen of this in the museum of the college, and another example of it is mentioned by Morgagni. The former is situated high in the neck; the latter is represented to have been in the middle of the chest—"circa medium thoracis." Vide *Epist.* xxviii.

nothing to be ascertained very clearly on the subject, neither have I been able, from the cases which I have seen, to connect the disease with any particular temperament. I think that almost always there is an exceedingly sensitive and easily excitable condition of the nervous system; but this seems to have resulted more from the distressing nature of the symptoms, than from any peculiarity of habit, although I have seen it in those who, to use popular language, have always been considered very nervous subjects. Whoever considers the very important functions performed by the mucous membranes and skin, and the numerous occasions on which they sympathize with each other, will be disposed to admit that affections of the one, will be considerably influenced by the conditions of the other structure. This is susceptible of illustration from facts which refer to the disorders of the urethra and rectum. The rigors which are sometimes attendant on stricture of the urethra, together with the influence which change of temperature exerts on facility in micturition, seems to me to be alone explicable by the sympathy which exists between the skin, bladder,

and urethra. No doubt there is a very manifest sympathy between the skin and kidney, but this will not explain the phenomena, which are observed in diseases. It will account perhaps for the desire which healthy persons frequently experience, to make water in passing from a warm to a cold temperature; but it does not explain the facility in micturition which strictured patients experience in passing from a cold to a warm atmosphere, which is in general the case. With regard to the rectum, some of its diseases have occasionally been excited by sitting on a damp seat; and this fact is so well known, that the implied caution is popularly familiar. If there be this sympathy then subsisting between the skin and the mucous membrane of the urethra and rectum, how much more probable is it that it should be excited with respect to the œsophagus, which is not only of analogous structure, but a part, to which the agent (cold or varying temperature), is often so directly applied. How often also, is the mucous membrane in immediate contiguity with that of the œsophagus, the seat of catarrhal affections. Viewing the subject in this

manner, I must think that cold is frequently the exciting cause of affections of this tube; and if the alteration of structure be once begun, the nature of the functions of the œsophagus, and the necessity which exists for their daily exercise, will explain its increase. Mr. Abernethy used to observe in his lectures, that a very good book, he considered, might be written on what are popularly called colds. He did not fully explain his meaning, but I have no doubt that he alluded to the many important affections of which they are so frequently the precursors. For my own part, I have little doubt that most of the inflammatory affections characterizing the variable climate of this country, are excited through the agency of that condition of the system usually expressed by the term "having caught cold." The *susceptibility* to this disturbed state of the cutaneous and mucous structures, is no doubt frequently the result of disorder previously affecting the digestive organs, the structural alterations to which it leads I believe seldom take place until the skin becomes affected in the manner to which I have alluded. I should wish to have followed this

subject more deeply, but I must at least defer it, since, in this place it would lead to a very inconvenient and I fear unacceptable digression. Disorder of the alimentary canal, and of the stomach in particular, which so often produce uncomfortable sensations in the œsophagus, as well as of the mucous membrane covering the fauces, will, probably in persons previously disposed thereto, lay the foundation of the disease under consideration. It is by no means improbable then, that irritation commencing in the contiguous parts may be communicated to the œsophagus. I must, however, conclude this section as I began it, by acknowledging that to me at least the causes are too often so obscure, as to baffle the most diligent investigation. We may add, however, an observation of Celsus: "Has latentium rerum conjecturas ad rem non pertinere, quia non intersit quid morbum faciat sed quid tollat."

The progress and character of the symptoms are as follows:—A patient first finds that occasionally there is difficulty in swallowing, attended with a feeling of spasm, which presently subsides, leaving no inconvenience. For a time

this occurs only after considerable periods, which become gradually shorter, but for a long time the patient swallows better some days than others, and frequently without difficulty. At length this becomes so augmented as to induce the patient to masticate his food more particularly, in consequence of fearing that a want of this caution will excite spasm, rather than from any suspicion that there exists already any mechanical obstruction. At this time the spasms usually become easily excited, and more or less distressing, until at length they are so violent as to produce a sensation of suffocation, which alarms and distresses the individual in a most pitiable manner. The face on such occasions being very red, the eyes suffused, and the whole countenance expressive of the utmost anxiety: to these is sometimes added a partial rejection of the food. Experience has by this time most likely convinced the patient that any attempt to swallow firm solids will be unavailing, and the spasm excited by it so certain that the trial is avoided.

The general agitation of the nervous system is now so considerable, that the very fear as it

would seem of spasms renders the individual so excitable that these are sometimes induced without any attempt at deglutition. Mental agitation proceeding from any other cause will excite a paroxysm. In this way, not only at times when it is desirable to take food, but generally, the patient is kept in a greater or less state of agitation and alarm, and there is sometimes considerable pain described as shooting towards the back. This, with the small quantity of food usually taken, is productive of considerable emaciation; the countenance assumes an habitual expression of anxiety, and the whole condition of the patient is truly deplorable. If the case be unrelieved, or if it be of a specific character, the patient sinks under the continued irritation which these circumstances, combined with imperfect nutrition, create and maintain. Towards the latter periods, ulceration takes place, and there is great suffering. The ulceration may be confined to the inner surface of the tube, or may destroy it entirely in the part affected. There is a case in St. Bartholomew's, where the lower end of the œsophagus and a portion of the cardiac orifice of the stomach are thus entirely destroyed.

Most museums contain specimens of the œsophagus in various stages of destruction by ulceration. It should be observed, that the symptoms of the strictured œsophagus may result from aneurismal or other tumours pressing on the tube, the latter being quite free from disease. Affections of the thyroid gland, and diseases of the larynx, are sometimes accompanied by difficult or painful deglutition. The mere mention of these facts will be sufficient to caution the surgeon against confounding the diseases to which they refer, with each other.

The treatment of strictured œsophagi should be conducted on precisely the same principles as those which regulate our conduct in corresponding affections of the other mucous canals of the body, with some little modification resulting from the probability, that the disease may be of a carcinomatous character. It is of great importance to determine this question in every case as soon as possible, since the same diligence which would relieve simple thickening, would in all probability aggravate a specific disease, and only hasten its fatal termination. There are, I conceive, no certain signs by which

this knowledge can be acquired, yet the probability may be inferred from the following considerations. If a patient have suffered for a long time, say, from the earlier periods of life; if the difficulty of deglutition has very slowly and gradually increased, so that it may be fairly accounted for by the ordinary increase of stricture; if there have been no pain, but only distressing spasms, and if an external examination, conducted in a satisfactory manner, discovers no departure from the natural condition of subjacent parts, nor is productive of pain or tenderness; if with this the patient's health be tolerably good, notwithstanding considerable emaciation, and the countenance present no peculiarly unhealthy or disordered tint, but only that expressive of anxiety; if, at the same time, there be no symptom of malignant disease existing in any other part of the body—it may be rationally hoped, that the case is susceptible of relief. If, on the contrary, the first symptoms have occurred late in life; if the progress of the disease has not only been attended with spasms, but with occasional pains when no spasms were present; if the progress have been

rapid, not occupying, perhaps, from its commencing symptom, more than a year; or if, having been for a considerable period slow, and unattended by very urgent symptoms, the difficulty of swallowing have somewhat suddenly become augmented, and attended with pain at other times; if with these symptoms the obstruction be near the stomach, and there be occasional rejection of the food, and if the patient be advanced in life—the case is probably one of cancerous disease. When, in addition to all this, there be a sallow countenance, with tenderness in any region of the abdomen, or other evidence of much general or local disorder, the case may (with reference to any practice adopted for its relief) be considered certainly one of specific disease.

The principal objects in the treatment of strictured œsophagus are to keep the alimentary canal generally, and the œsophagus particularly, in as tranquil a state as possible, and to endeavour to dilate the tube by the introduction of elastic gum or armed bougies, according to circumstances. In the first place, it is expedient to obtain evacuations from above downwards, to

assure ourselves that there be no accumulation of fæcal matter in the bowels, after which the action of emollient or gently laxative enemata may be depended on, since it is desirable to give as little medicine by the mouth as possible; nevertheless the laxatives in this way, should the enemata prove inefficient, may be occasionally repeated. The most convenient form of administering medicine in these cases is in powder, since few patients can swallow pills, and fluids very frequently produce more spasm than pultaceous solids. With regard to the measures best calculated to relieve spasm, exclusively of the bougie or remedies conveyed by it, I have found camphor, valerian, castoreum, with or without opium, in different combinations the most effectual. Counter irritants may also be applied externally, but I cannot say that I have experienced much benefit from their adoption. I think I have seen advantage result from a plaister of ext. belladonnæ applied over the part; but as I have never employed it alone, I cannot speak more in its praise, than to recommend a trial of it, since it cannot do harm, and is evidently cal-

culated to do good. Leeches applied along the course of the œsophagus are sometimes of considerable benefit, and should never, in my opinion, be neglected. The food should be light and nutritious, and chiefly of pulpy farinaceous substances; these being generally well adapted for the health of the individual, and admitting of more easy deglutition than any thing which is absolutely fluid. The patient should be kept as tranquil as possible, and receive every encouragement from the surgeon, which the confidence reposed in him so well fits him to bestow; as nothing so readily excites spasms or renders them more severe when excited than mental inquietude. The treatment before mentioned should be adopted for a few days when the symptoms are not excessively urgent, before any attempt be made to pass an instrument; and if the surgeon and patient be strangers to each other, there is some advantage in an interview or two taking place previously to the examination. It may happen, that on the first trial, the situation of the stricture may be ascertained and its nature judged of; but more frequently the spasms consequent on its presence,

combined with the fears of the patient, disable the surgeon from making up his mind very satisfactorily at this period; but he had better not attempt much on the first visit; it is necessary to keep up the confidence and quiet the alarm of his patient, and nothing will do this so effectually, as rendering the first and second examinations as little irksome as possible. It is truly agreeable to see how tranquil by this caution, and by such manœuvring as humanity and common sense will suggest, a patient who had been at first in the utmost state of alarm, will become in a few visits, and this is the time for what I may consider the real examination of the case. With regard to the size of the instrument which should be first employed, it must depend on circumstances. In my experience, patients have seldom requested advice until they have found it either difficult or impossible to swallow more than a very minute particle of *solid matter*. Hence it will be in general quite useless to attempt the introduction of other than a small instrument; the average being less than a full sized urethra bougie. The surgeon will invariably find that

the confidence and hope of his patient will be materially increased by the bougie having passed the obstruction. Wherefore it becomes of importance to adapt it to the probable capacity of the strictured part; and if any doubt on this subject exist in the mind of the surgeon, he had better begin with an instrument a size less than the contracted portion is capable of admitting, than subject his patient to the annoyance of unnecessary and repeated failures. In general where the bougie (the preparatory measures having been employed) is thus introduced under auspicious circumstances, the patient almost immediately, that is, the next day, experiences more or less relief; either the difficulty of swallowing is in a slight degree mitigated, or, if this remain the same, the spasm is less distressing; not unfrequently, however, there *is even with the unarmed instrument a sensation of soreness for a day or two,* and although it is difficult to name any precise time best suited for the reapplication of the instrument, three days may be stated as the best average interval. In the majority of cases the surgeon will find it advantageous to introduce the same instrument

several times before he employs one of larger diameter, though occasionally the stricture will admit an increasing size at the next introduction. The choice of these two methods of proceeding should be regulated by the difficulty of passing the stricture, and the degree of spasm or distress which its application may have excited. The treatment should be continued until the stricture admit of a bougie of about half an inch in diameter. It is seldom desirable to proceed so far as to measure the instrument only by what the œsophagus in a healthy state is capable of admitting; for, in this complaint, where there is always organic alteration, if we attempt this, we shall only produce re-action, which will increase the patient's sufferings.

With these cautions the bougie should be introduced at the interval above mentioned, until the œsophagus be so enlarged that the patient is enabled to swallow with comfort, when the surgeon should be content with the occasional introduction of the instrument last employed, which in some cases may be accomplished by the patient. Hitherto I have supposed that, by the assistance of remedies

already mentioned, the bougie (its use being regulated in the manner recommended), may be introduced without the aid of any other application immediately directed to the stricture. It will not, however, be found that this is always practicable, but that we shall require not only the assistance of remedies applied to the affected part, to allay irritation, but also the use of caustic. With regard to the applications employed with a view of relieving irritability, a solution of the argenti nitras, used at first weak, and gradually strengthened, or the tinctura opii, both applied by means of a sponge, adapted to a convenient instrument, seem to be the best remedies. The use of caustic is not only sometimes advantageous, but absolutely necessary, to the successful progress of the treatment. Here, again, it becomes of the highest importance that the disease should not be specific, or carcinomatous, but I know of no better directions than those I have already given. The caustic I have used, is the argenti nitras, and the mode of applying it precisely that recommended for stricture of the urethra. In general it produces a sensation of heat and

soreness for a day or two, and I have, in conformity with the plan which I have adopted for the urethra, been accustomed to allow these to subside, before I repeated the application of the armed or other instrument. My experience does not *allow me to say what would result from inattention to this particular;* I should suppose from analogy, that it would be productive of increased irritation, and rather retard the relief which it is our object to accelerate. The caustic should never be employed, so long as the size of the instrument can be increased without it, and the attempt to do this should have been preceded by the thrice-repeated introduction of the instrument which the tube has been already found capable of admitting. Should the aperture be so small, when the patient first seeks relief, as to prevent the proper quantity of nourishment being taken, nutritive clysters may be administered, consisting of gruel, arrow-root, or other farinaceous compounds; in some cases it may be even proper in this way to administer good soups, deprived of the stimuli usually incorporated with this article. By the forementioned means, we shall generally be

enabled to render a patient very comfortable, but I do not believe that we can cure the disease, or entirely remove the thickening which accompanies it, any more than we can that kind of stricture of the urethra where a great change of structure has taken place. Should the stricture of the œsophagus be the consequence of specific disease, surgery affords but little relief. The occasional introduction of such an instrument as the œsophagus will readily admit of, may be vindicable, and we must endeavour to support the patient's strength by nutritive enemata. In this case, the plaster of belladonna may be applied. I have heard of small tubes being introduced and left in, and fluid food injected through them, but I have never tried this practice; it seems to me well calculated to keep up irritation, which, whether the disease be specific or otherwise, it is highly desirable to avoid; and I have seen no case where such a practice could be borne by the patient. I shall mention one case, because it shews how much may be done under very unpromising circumstances, if the disease be not of a carcinomatous character. It also, in a

measure, supports the view which I have taken as to the best means of judging of the nature of the affection.

A lady, æt. 50, of an originally nervous temperament, was brought to me from a considerable distance from the country, for advice, in consequence of difficult deglutition. Her fears were so great on the subject, that she could be by no means persuaded to come to London for advice; this was effected by some friends here giving her an invitation to visit them as the avowed object, the real one being for the purpose I have mentioned. The first time I saw her she was considerably agitated. She gave the following account:—that for many years she had been subject to spasms in her throat, or occasional sensations of impeded deglutition; the precise period was not mentioned, but I have since ascertained it to have been not less than twenty years. These symptoms had increased in frequency and severity until she was unable to swallow any food which was not reduced to a fine pulp, either previous to her taking it, or by careful mastication; and even with these cautions, very small particles would occasion-

ally meet with obstruction, and give rise to very distressing and even alarming spasms, from the feeling of threatening suffocation by which they were accompanied. Mental agitation would sometimes produce them without the aid of any attempt to swallow. With the cautions above mentioned, she was a very long time in taking even a moderate meal, and although naturally thin, she appeared evidently to have suffered further emaciation, partly the result of anxiety, and imperfect nutrition. In addition to all this, society, for obvious reasons, had become irksome to her. Her general state of health appeared in other respects tolerably good, if I except a torpid state of the bowels. The first thing that was done was to evacuate these by small doses of calomel and jalap, with a little ginger, given every four hours until the desired effect was produced. Her choice of food, and the cautions she exercised in taking it, rendered any particular directions on these points unnecessary. On the first attempt at introduction, I could not pass even a small varnished catheter; it seemed to enter the stricture, but would not pass through it. It excited severe

spasms, the countenance became suffused, expressive of the greatest anxiety, combined with difficult respiration, the patient appearing in danger of suffocation, and rising from her seat in a very hurried and disturbed manner. Notwithstanding that she could ill manage deglutition of fluids, a mixture composed of powdered valerian, with tinct. castorei and mist. camphoræ, was prescribed, which seemed to quiet the nervous system generally. A tartar-emetic plaister was put along the line of the œsophagus, but this was soon after replaced by a plaister of belladonna, which seemed to be productive of advantage; the stricture was touched with a solution of argenti nitras, conveyed to it by a sponge. Leeches were also applied, and repeated previous to further introduction of the instrument. In about three visits, she could allow the instrument to be pressed lightly on the part for several seconds, and without exciting any such distress or spasm as had at first attended its introduction. At the next visit, I succeeded in passing a moderate-sized catheter, which was increased two sizes. At this period, she proposed leaving

town, but said she would stay if I could say the precise time which would be necessary; but as I would not do this, I coincided in her wish of returning home, particularly as I was well acquainted with the ability of the gentleman under whose care she would be. She was extremely anxious to know my opinion of the result of the plan proposed to be pursued. The reasons which determined my answer may be gathered from the foregoing paper; the opinion given was, that by perseverance in the plan she would be ultimately rendered very comfortable. This case is still under treatment, but as far as it has gone it promises to justify the opinion which has been given. As this paper was going to press, I wrote to Mr. Dyer, a very intelligent surgeon, of Ringwood, requesting him to inform me of the progress of the case, and also of the opinion he entertained as to whether the stricture was the result of common thickening or malignant disease. His answer I subjoin:—

"My dear Sir,—As the time is now arrived when you wished to hear from me, I have the gratification of informing you that our patient is still improving: the late changeable weather in

some degree affected her general health, so as to excite spasms occasionally, but these I am quite satisfied depended on such circumstances, rather than on the local affection, in which opinion ——— now decidedly coincides. I keep to the last sized bougie, and, indeed, adhere altogether to the same plan as when I last wrote, and I do not see that we can deviate from it with any advantage. I often wish you could see her, to witness not only the ease with which the instrument* passes, but particularly the improvement in her general health, occasioned by its use enabling her to take her food in greater quantities, and with so much more comfort. With respect to the point you hint at (which, indeed, is a most important one), whether the obstruction be the result of common thickening consequent on chronic inflammation, or whether it be the effect of any specific disease, I should certainly say (bearing in mind the long duration of the affection, certainly more than twenty years), this case has arisen from the former cause; for, had it been the latter, surely other

* I sent this instrument to Mr. Dyer. As nearly as I can recollect, it is something less than half an inch in diameter.

symptoms would have arisen long ere this, and if not spontaneously, the means to which we have had recourse, would have been sufficient to have excited them, and thus, instead of having lessened the mischief (which is beyond doubt) to have increased it. I think, therefore, there cannot be any question as to the nature of the disease, or that we have every prospect of ultimate success in rendering our patient comfortable. She is, unfortunately, of a nervous, irritable habit, easily excited, which has increased the difficulty with which we have had to contend." *The remaining part of the letter I omit, as it consisted merely of the usual terms of politeness by which letters are generally concluded.*

ON THE

DIAGNOSIS OF TUMOURS

OCCURRING AT, OR IN THE VICINITY OF, THE GROIN.

"On se decide toujours mieux lorqu'on a devant soi des objets de comparaison."—*Ponteau Mel. de Chirurgie.*

The diseases giving rise to tumours in the groin or its vicinity, the diagnoses of which are presented for consideration in this paper, are, inguinal herniæ, hydrocele of the chord, varicocele, hydrocele, hæmatocele, diseased testis, abscesses, femoral hernia, enlarged glands, anomalous tumours, enlargement of the femoral vein, and aneurism.

I feel that there is great difficulty in making any arrangement of the subjects, which is not liable to objection, I will therefore briefly state the order in which they are described, first observing that the external characters of hernia will be modified by the following circumstances.

It may be large or small, reducible with greater or less difficulty, irreducible, or strangulated; lastly, it may contain omentum or intestine, or both. It will be found that these differences in hernial tumours, are attended by a corresponding variety in the diseases for which they may be mistaken. I shall, therefore, first describe the different forms of hernia; and under each variety, the disease with which it may be confounded. The order corresponds with that in which the subjects are above enumerated. I have added such illustrations as my Case book afforded, when they appeared calculated to impress an important fact on the recollection of the reader.

REDUCIBLE INGUINAL HERNIA—(INTESTINAL).

It forms a tumour of uncertain magnitude, usually of an oblong figure; it is soft to the touch, which, if delicate, affords a feeling of elasticity. It imparts an impulse on coughing, recedes on pressure, particularly if this be directed upwards and outwards, and frequently retires spontaneously in the recumbent position. Irregularity in the action of the bowels some-

times attends this form of hernia, but not so frequently as other varieties of the complaint. The spermatic chord is felt distinctly behind the tumour,* if the latter be sufficiently large to have extended along this process, which may be always recognized by the peculiarly resisting fibrous-like feel, characterizing the vas deferens.

I know of no disease which can be mistaken for the foregoing variety of hernia, excepting a chronic abscess, presenting at the abdominal ring. The presence of palpable fluctuation, and the absence of the characters of hernia, would no doubt generally render the distinction easy. A case, however, may occur with certain peculiarities, which would render the diagnosis difficult, and, for a time, impossible: of this I have met with an interesting example. My attendance was requested to a female, whom I found in the following condition:—She was in bed; her bowels were constipated, and she complained of pain in the abdomen, with slight tenderness, on pressure, at the abdominal

* Certain varieties occasionally take place in the situation of the spermatic chord. It has been found separated, the different portions lying on each side, or behind and in front, or altogether in front of the protrusion.—*See Scarpa. Cooper, and Lawrence.*

ring. Examination of this part discovered a small tumour, having very much the characters of inguinal hernia. As the tumour readily receded on pressure, and as nothing could then be felt on the introduction of the finger within the ring, she was merely ordered to keep quiet, and to take some aperient medicine. In about a week, the bowels having been regularly evacuated, the tenderness at the ring increased, and the skin, which had been hitherto of its natural colour, became tinged with the blush of inflammation; this gradually increased for a few days, when the tumour burst, and discharged a considerable quantity of healthy-looking pus. She now gradually recovered, although some weeks elapsed before the discharge had entirely ceased.*

* It should be observed, that inguinal herniæ in the female are sometimes so large as to distend the labia pudendi. I gave a rough cast of one, about the size of a small cocoa nut, to the Museum of St. Bartholomew's Hospital, and I operated about five years ago, on another nearly of the same size which had become strangulated, in which the whole wound united by adhesion. I wish to add, that I have seen several cases of abscess in the labia, but never one which resembled hernia; although, in a recent example there was, before the matter was evacuated, a slight impulse of coughing, which I am at a loss to explain. Like those occurring in the scrotum, they should be opened without delay, and for the same reasons. (See section on this subject).

CASE PRESENTING THE ORDINARY CHARACTERS OF EASILY REDUCIBLE INGUINAL HERNIA, ACCOMPANIED BY STRANGULATION AT THE INTERNAL RING.

I was sent for by a gentleman to see his servant, who gave me the following account :— That he had a rupture, and that finding himself unwell, he had sent for a surgeon, who had examined the tumour, and left him, saying, that "the rupture had gone up." Not finding his symptoms relieved, he had sent for me. I found him walking about the house, and endeavouring to follow his employment. On examining the abdominal ring, I found a small inguinal hernia, which readily receded on pressure; but as he had all the symptoms of strangulation in a well marked degree, I examined him more particularly, and on thrusting the point of my finger into the ring, distinctly felt that the intestine only receded within this external opening of the inguinal canal, beyond which I could not reduce it by position or otherwise. I ordered him to bed, and immediately instituted the usual measures for the reduction of strangulated hernia; all these were employed without effect,

with the exception of the tobacco enema, which was administered about eight o'clock in the evening. I remained with him a short time after its exhibition; he felt very faint, and his pulse faltered considerably; but the hernia remained unaltered. I then left him for an hour, in order that he might recover from the effects of the tobacco, and then visited him with the intention of operating. I found him now expressing himself greatly relieved; he had had no further sickness; and, on examining the ring as before, no hernia was perceptible. In less than another hour, he had an evacuation from the bowels, and in two days felt perfectly well. I may observe, that Mr. Stanley saw this case with me, and that there existed no difference of opinion between us respecting it.

CASE OF HERNIA WITHIN THE INGUINAL CANAL, IN A FEMALE, ACCOMPANIED BY SYMPTOMS OF STRANGULATION.

My attention was requested to a woman, thirty-three years of age, whom I found labouring under symptoms of strangulated hernia. As

these were unequivocal, I examined the abdomen with great attention, particularly the inguinal and femoral openings. No hernial or other tumour was discoverable. On making pressure along the inguinal canal on the left side, she complained of great tenderness, which was confined to this situation. On inquiry, I found that she had been ruptured, and that some years before she had received a truss from the Society, the use of which she had long since discontinued. As it was obviously interesting to know for what description of hernia she had been relieved, I immediately consulted the books of the Truss Society, and found her case recorded as a "left inguinal." No doubt now remained in my mind as to the nature of the case, and I accordingly treated it as strangulated hernia, intending to operate should the measures prove unsuccessful. The same evening we were so fortunate as to procure evacuations; her symptoms immediately disappeared, and no tenderness existed in the course of the inguinal canal. For the information of those who have not met with such cases, I would observe, that in none of the examples which

have fallen under my observation, has there been any external tumour; although, occasionally, slight fullness over the inguinal canal has been observed.

OF INGUINAL HERNIÆ, WHICH REQUIRE MORE OR LESS MANIPULATION TO EFFECT THEIR REDUCTION.*

The form and size are variable; the tumour generally extends to a greater or less degree down the course of the spermatic chord. The pressure exerted by the ring, gives the swelling considerable firmness and elasticity. There is impulse on coughing, and not unfrequently a slight gurgling perceptible by the finger of the examiner. Inquiry will generally elicit that its occurrence was sudden, and that it has subsequently become somewhat larger. In most cases there is greater or less accompanying disorder of the bowels, and occasionally some little tenderness on pressure.

* The necessity for this division may be questioned—but as the external characters are different from the preceding variety, and as this form may be confounded with diseases for which it is impossible to mistake a hernia which recedes on slight pressure, or in the recumbent position, I have thought it best to adopt the distinction.

It is the common practice to place patients in the recumbent position previously to attempting the reduction of a hernia, and in strangulated cases it is very necessary; the trunk being raised, the leg bent on the pelvis and carried to the opposite side, in order that Poupart's ligament, and the fasciæ connected with it, may be relaxed as much as possible. Most cases, however, of the description here alluded to, may be easily reduced, whilst the patient is standing, especially if he be directed to bend the body a little forward; but as the manipulation of the hernia is too often conducted in a very awkward manner, I take this opportunity of describing that which has appeared to me the best mode of employing the taxis in the cases under consideration:—The scrotum should be grasped at the inferior part of the tumour, and the integuments covering the latter rendered tense, by the surgeon passing one hand immediately over the other until this be effected, to such a degree, as to produce a general pressure over the hernia. The tumour being maintained in this condition by one hand, should be grasped by the finger and thumb of the other

near the ring; moderate pressure should now be exerted by the finger and thumb in a direction upwards, and outwards, giving the parts included between them a sort of half twist on each other. The tumour has now a general pressure on it throughout, with a particular degree of it near the abdominal ring, or external opening of the canal through which it has escaped from the abdomen. The pressure should be steadily continued, when, in a few minutes, and sometimes in a few seconds, the hernia will be reduced.*

HYDROCELE OF THE CHORD.

This is the disease which, in my experience, has been most frequently mistaken for the hernia last described, or at least so far as to occasion a doubt as to the nature of the complaint.

Collections of fluid in the tunica vaginalis of

* I have not thought it necessary to make a separate section on the external characters of strangulated hernia. The few remarks which I have offered on this subject will be found in the section on "Femoral Hernia," and they apply so nearly in common to both varieties, that the mention of them, in connexion with inguinal hernia, has been deemed superfluous.

the chord are most frequently found in children, but they are by no means uncommon in the adult. The history of the case would generally of itself afford a sufficiently accurate diagnosis, were the accounts of patients to be depended on; but as neither in these cases, nor in any of the diseases occurring in this district of the body, can the smallest reliance be placed on such sources for information, the surgeon must seek the required distinction in the different characters of the tumours to which they give rise. In hydrocele of the chord the effusion of the fluid is almost always gradual. The tumour it forms may be distinguished from hernia by the following signs: there is no impulse on coughing, it is much more elastic, and so moveable as in general to admit of considerable change of position; whilst its general form bears a great similarity to that of hernia of corresponding magnitude, and although its upper boundary may reach quite to the abdominal ring, yet there is no narrowing of it, as is perceptible towards the neck of a hernia. If the tumour be large, two or three fibre-like productions will be felt at its upper portion as soon as it be rendered tense

by pressure superiorly. When the tumour is small, nothing of this kind can be felt. The spermatic chord is behind the tumour: having, therefore, the same relation to it as to the hernia, from which it is to be distinguished; the tumour is scarcely ever tender; the patient usually allowing any manipulation which may be thought requisite, without the least complaint.

Cases have occurred wherein a large cyst* has formed in the scrotum, but distinct from the tunica vaginalis, and of which there are specimens in the college. Whether the following may be considered as a case of that description, or (what appears to me more probable) an enormous specimen of hydrocele of the chord, I cannot determine.—A man applied to me with a tumour extending downwards from the abdominal ring, and of the size of a cocoa-nut. In appearance it resembled a large hernia, the testicle being readily felt at the bottom of the tumour, perfectly distinct from it. As a careful

* Hydated cysts are said to have been found in the course of the spermatic chord. I have no recollection of having seen such a case. The fluid would in this case so much resemble that effused in hydrocele in the same situation, as in all probability to render the distinction of the two cases as impossible, as it appears in a practical view, unimportant.

examination detected none of the characters of hernia, I punctured it with a trocar, and evacuated a large quantity of fluid, having the obvious properties of the ordinary water of hydrocele.

Cases have occurred of fluid within the spermatic chord, communicating with the cavity of the abdomen, in consequence of a failure in the natural process, by which the peritoneal canal connected with the descent of the testicle usually becomes closed. I have seen cases of this description, nor do I consider the diagnosis from hernia difficult. It is not, however, easy to describe the difference they present on examination to the finger. The cases which I have seen, have occurred in young subjects; the tumour yields an impulse on coughing, and easily retires, but still feels very unlike hernia. There is no gurgling on its reduction; it imparts a decided feeling of fluctuation, quite different from any thing discoverable in a hernia, and the coverings of the tumour feel very much thinner than in any specimen of rupture which has ever occurrred to my observation.

SCROTAL HERNIA.

As an inguinal hernia increases in magnitude, and extends downwards towards the testicle, it usually receives the appellation of scrotal, and becomes liable to be confounded with other diseases. Some of these are not unfrequently found in conjunction with hernia. The scrotal hernia is more or less pyriform; the little pressure exerted by the enlarged abdominal ring, together with the readily yielding cellular tissue of the scrotum, produce considerable difference in the elasticity of the swelling, which in *easily* reducible cases is very trivial. The spermatic chord is (with the rare exceptions already mentioned), felt distinctly behind the hernia, and however large it may be, the testicle may be easily distinguished at the inferior extremity of the tumour. If the hernia be cogenital, the testicle may not be so readily perceived, as it may then be in contact with the hernia, but a very little careful examination will detect it. In very large specimens, also, the tumour may descend so low as to alter the relative

position of the testicle. In such cases the gland may be placed laterally with respect to the hernia, and if so, will be usually found on its outer side.* There is impulse on coughing, and a palpable gargouillement on handling; if the hernia be reducible with difficulty, it is most frequently the result of a loaded condition of the protruded bowel, and in this case it has a considerable degree of elasticity. The history of the case will shew that the disease commenced at its upper part, and that its bulk has gradually increased from above downwards. In almost every case of hernia arrived at this size, the patient has already been made acquainted with its real nature; for it is seldom that hernia is mistaken for hydrocele, or diseases of the testis, but these have too often been mistaken for hernia.

* A case may occur in which the testicle not having descended into the scrotum, may present at the ring alone, or combined with hernia. The case is easily distinguished by the firmness which characterizes the testicle, by the peculiar and painful sensation excited when pressure is made on it, and by its absence from the corresponding side of the scrotum.

OF THE DISEASES WHICH MAY BE CONFOUNDED WITH THE SCROTAL HERNIA.

OF HYDROCELE.

It has been already observed, in connexion with hydrocele of the chord, that no dependance is to be placed on the account given by patients as to the progress of the case; and this applies with equal force to hydrocele. I have frequently received as the history of this disease, accounts of its sudden occurrence, diminution in the recumbent position, and other characters which belong only to hernia; and then, to the surprise of the patient, have drawn off the water of hydrocele. The tumour of hydrocele presents the following characters:—It is slightly elastic, its increase has been gradual, and from below upwards, the testicle cannot be felt as a distinct body; but may usually be recognized by the greater hardness and solidity which it gives to the posterior and inferior aspect of the swelling. If the tumour be pressed on superiorly, so as to render the skin tense over it, its

elasticity will be much increased, and when it is pressed on alternately by two fingers, fluctuation will be frequently perceptible. The elasticity will vary according to the degree of distension which the tunica vaginalis may have undergone; and if this be considerable, the testicle may be recognized with difficulty, or may not be distinguishable. I have known the tunica vaginalis yield unequally, so that it has formed a sort of process or pouch on one side of the tumour, having the appearance of a testicle, but imparting to the touch a sensation very like that given by a reducible hernia.* It has been advised to hold a candle to these tumours, to see if they were transparent; but I should not entertain a very high opinion of any man's knowledge of these matters, to whom such a mode of investigation was necessary. For if the case were so plain as to admit light through the integuments, the presence of fluid must be easily cognizable to the most inexperienced examiner, whilst the absence of such

* I had occasion once to inject a hydrocele of this kind; there was nothing otherwise peculiar in the case:—the patient did perfectly well.

transparency, is so far from affording the slightest evidence that the case is not hydrocele, that I will venture to assert, that not in one case in ten, are the coverings so diaphanous as to allow of the candle throwing any light on the subject. In hydrocele of the tunica vaginalis, these fibre-like productions of which I have spoken, in connexion with hydrocele of the chord, are very palpable; and, although they are not equally so in all cases, they may be invariably felt on exerting a little pressure superiorly, so as to tighten the integuments covering the tumour, and thus making the hydrocele, as it were, descend to the bottom of the scrotum. Whether these fibrous productions are formed by elongated and thickened cellular tissue, or by partial separation of the vessels of the chord, I will not attempt to determine; perhaps both may contribute occasionally. The chord certainly does sometimes become separated by hydrocele;* so that the course of the spermatic artery is altered. This is a point of some consequence in practice; for there is reason to believe that vessels of considerable

* See *Scarpa. Sull'. Ernie, &c.*

magnitude have occasionally been wounded in tapping hydroceles. I had tapped a large number before I met with a case of this kind: I never saw but two, and these occurred within a week of each other. I shall briefly relate them; premising, that although the spermatic artery might be wounded (where its course had been changed) in tapping hydrocele, yet, that under certain circumstances, particularly if there were any peculiarity in the puncture, as cutting a small piece out of the side of a vessel, the external pudics might furnish a considerable hæmorrhage. Where hydrocele has existed for some time, and where the integuments have become much distended, the vessels of the scrotum often enlarge to a great degree. This may be seen in the venous trunks, and felt in the arterial, which frequently pulsate with considerable power. In consequence of these circumstances, I now never tap a hydrocele, without looking very attentively to the spot on which I propose to puncture, and feeling that there be no artery ramifying in that situation.

CASES OF HYDROCELE OF WHICH THE PUNCTURE WAS FOLLOWED BY HÆMORRHAGE.

In the spring of 1822, I tapped a hydrocele in a man who was between sixty and seventy years of age, and drew off a full pint of the ordinary fluid of hydrocele. A drop or two of blood followed the removal of the canula, as is usual. The next day he applied to me, with the tumour nearly as large as it had been before the puncture; the surface of it appearing of a livid blue colour, blood being effused under the skin covering it, as high up as the root of the penis, and extending laterally nearly to the groins. On examination, the general mass did not feel tense, much less did the cellular tissue appear so, which connects the scrotum with the tunica vaginalis. Entertaining hopes that the tumour formed by the comparatively distended tunic might result from aqueous fluid recently effused, and that the blood evidently in the cellular tissue of the scrotum might become absorbed, I ordered him to bed, and prescribed some aperient medicine. In two days the dark colour of the tumour had nearly disappeared,

indicating, of course, the absorption of some of the effused blood. The diminution of the swelling was nevertheless inconsiderable. In the mean time fever had supervened, which was so rapidly developed that he had a typhoid tongue, and was occasionally delirious. At this period a circular patch of slough had formed on the front of the tumour, through which, on making a very little pressure, about eight ounces of coagulated blood were evacuated. Cold washes were applied to the part, the sloughing did not extend further, and the wound gradually healed, there being no subsequent aqueous or sanguineous effusion. The fever was so severe at one period, that I had great doubts of the recovery of the patient, and I attribute the rapidity and severity with which it was developed to a much disordered state of the bowels, which I did not discover to have existed until it was at its height. The fact was, that both the patient and his wife were deaf, and the latter not hearing my questions I suppose distinctly, had always answered my inquiries as to the state of his bowels satisfactorily, when fortunately one day, a third person being present, and hearing

me answered in the usual manner, observed, "She don't hear you, Sir, for I heard her say this morning that he had not had a motion for twelve days." Of course I immediately adopted measures to correct this condition, and the fever subsided almost as rapidly as it had been developed.

CASE II.

This patient was a middle-aged man, in whom the hydrocele was tapped by my friend, Mr. Taunton, at that time the assistant-surgeon to the Truss Society of which he is now surgeon. The case was very like the preceding, as regards the character of the tumour, and the time of effusion after the operation. The patient complained of more pain in the tumour, but had no fever. Notwithstanding that here also a considerable quantity of blood was evidently in the cellular tissue of the scrotum, the experience of the former case induced me at once to make an opening into the tunica vaginalis; by this measure, about the same quantity of blood was evacuated in a fluid state, and the patient got

well without further suffering or inconvenience. A case of a similar kind will be found recorded in the second volume of the Edinburgh Medical Essays, by Mr. Jamieson.

ON THE DIAGNOSIS OF HŒMATOCELE AND HYDRO-SARCOCELE, FROM HYDROCELE.

It is important that hydrocele be distinguished from two other complaints which it more nearly resembles than hernia; first, that in which the fluid collected in the tunica vaginalis, is of a dark, sanguineous, or coffee colour, (generally called hœmatocele); and, secondly, that in which, although there be a certain quantity of fluid, the bulk of the tumour is chiefly formed by a diseased testis (hydro-sarcocele). I have purposely deferred making any remark on certain morbid conditions of the tunica vaginalis in order that the mention of them might be connected with that of the disease, with which the recollection of them is most important, viz.

hœmatocele. However varied the remote causes of these effusions into the tunica vaginalis may be, I am convinced that the proximate one is a kind of chronic inflammation or irritation of that membrane; for the following reasons. Even hydrocele very seldom forms (unless in patients who are generally dropsical) without a greater or less uneasiness being felt in the part, and in some cases this is considerable, especially where it is consequent on local injury, under which circumstances the fluid frequently becomes effused with great celerity. It should be recollected also, that aqueous effusion and thickening is a very common result of irritation in the serous membranes generally, of which structure the tunica vaginalis is an example. Hydrocele is seldom unattended by more or less thickening of this tunic, although it is not often so considerable as to interfere with the ordinary characters of the tumour. But in hœmatocele this thickening is much greater, and in some cases so enormous, that excepting from its still more or less smooth interior, no one would recognize it as having been a serous membrane. I have known the tunica vaginalis in hœmato-

cele a full inch in thickness, and it is chiefly this circumstance on which the difference in its character depends. The great importance of the diagnosis between hydrocele and hœmatocele results, from the latter being by no means so easily managed. It is true that hœmatocele may generally be punctured with the same impunity as common hydrocele, and that it may sometimes be radically cured by the same methods; but it is also indisputable, that in many instances the irritation consequent on treating a much-diseased tunica vaginalis, in the same manner as in hydrocele, is very much more considerable, the result more doubtful, and, under some methods, attended by fatal consequences.* In examining a tu-

* I once saw a case of tumour in the scrotum, concerning the nature of which there was much difference of opinion. At length it was agreed that an incision should be made into it; this discovered a certain quantity of dark fluid, within a very much thickened tunica vaginalis, a portion of which was removed; the patient, however, died. I believe that a single puncture would have given the same information as did the incision, without any mischief resulting from it. I understand a case has recently occurred in St. Thomas's Hospital, in which the removal of a much-thickened tunica vaginalis proved fatal. This man had been often tapped, without the supervention of any unfavourable symptom.

mour of this kind, the first thing distinguishing it from ordinary hydrocele is its weight, which to a practised hand is much greater. On rendering the tumour tense by pressure superiorly, its elasticity is by no means increased in the same degree, the fluctuation is much more obscure, or scarcely perceptible, and, if cognizable at all, feels, as in fact it is, much more deeply seated. It is hardly ever possible to distinguish the testicle from any greater firmness or solidity, imparted by it to the posterior and inferior aspect of the tumour, as may be almost invariably done in common hydrocele. The chord, in these cases, is generally somewhat thickened, and greater uneasiness has usually accompanied the growth of the swelling, but neither of these can be depended on. It is on the conjunction of all, rather than on the presence of any one of these characters, that the distinction can be confidently founded. In distinguishing this or any other disease of the testis or tunica vaginalis from hernia, if, with the characters which respectively belong to each, there be present any irritation in the urinary organs, we may be almost certain that

one or other of the strictures which I have just mentioned, is the seat of the affection.

HYDRO-SARCOCELE.

In the foregoing diseases, it is by no means uncommon to find the testicle somewhat enlarged. If any change have occurred in hydrocele, the gland is found enlarged and somewhat softened in its texture, whilst in hœmatocele, the alteration of the testicle is generally from its natural to a firmer consistence. In these cases, the testicle is in no danger from tapping, and the ascertainment of its precise condition is not material, as this can be accomplished so satisfactorily after the evacuation of the fluid; but in hydro-sarcocele, the testicle forms the greater part of the tumour; wherefore, tapping performed in the ordinary manner, would probably wound it. Whilst the external characters of hydro-sarcocele in most respects resemble those of hœmatocele, yet its weight

will be found still more considerable,* and will of itself, in all probability, induce the surgeon to examine the tumour very attentively before he delivers his opinion on its nature. The examination should be conducted in the following manner:—Instead of rendering the skin very tense over the tumour, so much pressure only should be exerted, as may be necessary to do away with any corrugation of the scrotum, which may be present, where the swelling has not acquired much magnitude, just so (if I may borrow a term) as to make the scrotum lie flush on the tumour below it; thus abolishing any space between them which may yet be occupied by the ordinary reticular cellular tissue. This degree of tension then being adjusted by one hand, the examiner should press lightly with two fingers of the other, when he will feel a sensation of fluctuation; then, pressing more deeply, the integuments will so far yield as to enable him to distinguish the firm resistance

* I know that some surgeons attach no importance to the difference in weight between hœmatocele and hydro-sarcocele. I can only say, that it has appeared to me to be a distinction justified by experience.

afforded by the testicle beneath them. If, in grasping the integuments superiorly to the tumour, the surgeon use sufficient force to render the integuments quite tense, he may ascertain the presence of fluid, but will never be able to even guess at the degree of the enlargement of the testicle. After the examination, the fluid may be safely withdrawn (if thought necessary), provided a fine trocar be cautiously introduced, with the finger within about half an inch from its point, to regulate the depth of the puncture, when the kind or degree of the enlargement of the gland may be accurately ascertained.

As it is the object of this paper to consider only those tumours of the scrotum or its neighbourhood, of which the diagnosis may be more or less difficult, I hope that the brief mention of those which remain, and with which I shall close this part of my subject, will be considered sufficient.

HERNIA HUMORALIS.

Common inflammation of the testicle, is sometimes excited by the passage of an instrument through the urethra; it is more familiarly known as a consequence of gonorrhæa. The rapid development of the inflammation, the pain, the greater or less constitutional irritation, and the discolouration of the integuments, sufficiently explain the nature of the case.

CHRONIC ENLARGEMENT OF THE TESTICLE.

The firmness, weight, and absence of elasticity, of exclusive affections of this gland of the chronic kind, as well as the slow growth of the tumour and general history of such cases, appear to me to render any laboured diagnosis unnecessary. In fungoid disease of the testicle a surgeon might inadvertently puncture the tumour, but not to mention the usual history and progress of the disease, or the state of health, and peculiar expression of countenance

by which it is so often accompanied, I feel confident that an accurate examination will either discover the real nature of the affection, or at least lead to such a suspicion of it, as to caution the surgeon from committing such a mistake. It is true, that in fungoid disease, there is often a very deceptive sensation imparted to the touch of deeply-seated fluid; but the surface of the tumour scarcely ever gives the idea of uniform density; on the contrary, it is very firm in some parts, whilst it presents this feeling of a deeply-seated fluid in others. In many instances, also, the tumour affords the idea of a lobulated structure. Were the nature of such a case ascertainable, it would of course be desirable not to puncture it; yet, should the surgeon happen to do so, and the caution were observed, which has been recommended with reference to hydro-sarcocele, it is very probable that little or no mischief might be occasioned by the operation.

ANASARCA OF THE SCROTUM.

This affection sometimes occurs in weakly children, a certain degree of it is not very uncommon in the adult, when there is much irritation existing in the urinary organs; it is also found in conjunction with general anasarca. The absence of elasticity, and the greater or less transparency of this tumour, together with the absence of resemblance to any other affection which has been described, render it almost impossible that the case should be mistaken.

INFLAMMATION AND SUPPURATION OF THE CELLULAR TISSUE OF THE SCROTUM.

I have seen several examples of this disease, and generally connected with irritation in the urethra. Nevertheless I recollect one very severe case of it occurring as an idiopathic affection. The tumour forms quickly, and with some pain. It is inelastic, excepting when the inflammation is severe, and then, the integuments presenting the ordinary appearances

characterizing that process, sufficiently demonstrate the nature of the case. I take this opportunity of remarking, that a free opening should be made as soon as the disease is ascertained, otherwise the pus infiltrating itself through the loose cellular tissue of the scrotum, renders the healing of the case very tedious. The adhesive inflammation which circumscribes the seat of common phlegmonous abscess does not appear to take place in the same degree in this situation.

OF HERNIA, COMBINED WITH HYDROCELE.

It is by no means uncommon to find hernia and hydrocele in combination. I have never found much difficulty in ascertaining the nature of the case, although a careful examination by the hand, and a rigid inquiry into its history is sometimes necessary. In general the hernia is superior and anterior to the hydrocele, occasionally the hydrocele ascends so as to be in front of the lower portion of the hernia. I regard the former as the rule, the latter as the

exception. The difference in the relative position of the two tumours will probably depend on priority of occurrence, and the time which may have intervened between the formation of the respective diseases. If the hydrocele have been the primary complaint, and have acquired considerable magnitude, it will probably be rather in front of the hernia. It should be observed, that the co-existence of hernia and hydrocele does not disable us from ascertaining by careful examination the distinctive characters of either. These I need not again particularize, and they will alone be sufficient where the tumours are small, to demonstrate the nature of the case. It is only where the tumours are both large and in close proximity, that any difficulty can possibly arise.

A case may occur where the hernia is cogenital, of large dimensions, irreducible, and with serum or other fluid effused, within the sac; but it is impossible to give directions which shall enable a surgeon to distinguish every complication which may attend a tumour formed in this situation, since in such rare cases the best surgeons are puzzled. He who has rendered

himself most familiar with the distinctive characters of the several cases, when occurring singly, will in general deliver the most correct opinion. In all complicated cases, if it can be ascertained that there is fluid in the tunica vaginalis, its cautiously conducted evacuation will greatly assist us in forming an opinion as to the remaining contents of the tumour. This may be accomplished by a trocar introduced to a moderate depth, or by means of a small incision cautiously made in the most depending part of the tumour, by a fine scalpel.

I have hitherto only spoken of the intestinal variety of inguinal hernia, and the diseases from which it is necessary that it should be distinguished; the next thing to be considered, is the omental hernia, presenting in the same situation.

INGUINAL HERNIA—(OMENTAL).

The characters of an omental hernia will vary according as it is reducible or otherwise. In the reducible form, it presents a soft, smooth, even slippery inelastic tumour, occupying a

greater or less extent of the spermatic chord or scrotum. There is impulse on coughing, the tumour readily recedes on pressure, and generally in the recumbent position. It returns, however, very quickly, on the patient resuming an upright posture, or if the pressure on the ring be removed. With reference to this point, I shall offer an observation in the sequel. The spermatic chord, although it has the same relation to the omental hernia, as to the intestinal, cannot be distinguished from it with the same facility.

OF THE DIAGNOSIS OF OMENTAL INGUINAL HERNIA FROM VARICOCELE.

That enlargement of the spermatic chord which depends on a varicose condition of its veins, may be readily mistaken for reducible omental hernia, and as the proper treatment for the one case is prejudicial to the other, too much attention cannot be paid to the diagnosis. Both tumours afford impulse on coughing, disappear in the recumbent position, and too often

present to the hand of the examiner precisely the same characters.

As the most important point in the diagnosis, I shall first mention that recommended by Sir Astley Cooper, viz. place the patient in a recumbent posture, and reduce the swelling (if this has not been already effected, by the change of position), then make steady pressure by two or more fingers on the ring to prevent its return. The patient should now be directed to rise; the pressure, of course, being continued. If it be hernia, the tumour will not re-appear: if, on the contrary, it be varicocele, the swelling will instantly be re-produced, the pressure of the hand contributing thereto, by obstructing the return of the blood through the enlarged veins. In order to render this mode of diagnosis clear, I shall subjoin a few observations on certain conditions of the inguinal ring, the recollection of which may possibly prevent what might appear to be a failure in the diagnosis. Some inguinal herniæ are exceedingly difficult to be retained in their situation when reduced, and this is generally attributed either to the large size of the hernia, or that of the aperture

through which it has escaped. I can confidently assert, that where the attempt to retain the hernia is made by a practised hand, and a good common truss, the difficulty is seldom attributable to either of these circumstances, but to the following.—The yielding of the inguinal ring takes place in a different direction, in different cases; usually, it enlarges from below, upwards and outwards, the two columns preserving more or less of their oblique position; but occasionally, even in herniæ of moderate size, the outer column yields in so great a degree, as to be brought down to a horizontal line, lying on the corresponding portion of the os pubis, so that a truss cannot be made accurately to adapt itself to the aperture, unless a portion of the pad press on the bone, which patients can seldom bear. If, in making pressure in such cases, the smallest possible aperture be allowed to remain, the intestine or omentum, and especially the latter, will slip out on the least exertion. As this involves a subject not intended to be discussed in this paper, I shall merely add, that if in a case of omental hernia this condition of the ring were present, and the

surgeon not aware of the tact necessary to keep up the omentum during the rising or coughing of his patient, the omentum would slip down, and thus a real case of hernia might be mistaken for a varicocele. Instead, therefore, of being content, in such a case, with the general pressure exerted by two or three fingers, the practitioner should insert the point of one into the ring, which will infallibly prevent the descent of the reduced omentum. It is not meant to be asserted that the large size of the hernial aperture is no obstacle to a rupture being retained in the abdomen, but that those cases which occasionally teaze or baffle a surgeon, derive their difficulty from this condition of the external column of the ring. If with it the aperture be also large, the difficulty will of course be increased. As a further diagnosis between these diseases, I should add, that the testicle frequently hangs lower on the side of a varicocele, that the peculiar dough-like feel, which pertains in a degree to both diseases, is much more strongly marked in the varicocele, and that, in the last-named affection, the sper-

matic chord is more confounded with the general swelling, than in a reducible omental hernia, from which, with a little careful examination, it is generally distinguishable.

IRREDUCIBLE OMENTAL HERNIA—(INGUINAL).

When a tumour is found in the course of the spermatic chord which has existed for a considerable period, having undergone no considerable alteration in its volume, which is firm and inelastic, and which cannot be returned into the abdomen, it may be suspected to be an omental hernia.

If with these characters, the patient speak confidently as to its having occurred suddenly, to its having for some time disappeared in the recumbent position, and if he be occasionally subject to disordered bowels, or stomachic irritation, the nature of the case may be considered as no longer doubtful.

OF ADIPOSE OR OTHER TUMOURS, WHICH MAY BE MISTAKEN FOR IRREDUCIBLE OMENTAL HERNIA.

Indolent tumours, generally of the adipose kind, are sometimes found in the course of the spermatic chord, and as their consistence is similar, they may be readily mistaken for adherent omental herniæ. I think the diagnosis can seldom be important. If the tumour be uncombined with any other disease, surgical interference can seldom be necessary; and if it should be at any time co-existent with symptoms of strangulated hernia, the rule of practice is the same, as I shall have occasion to mention more particularly in connexion with the femoral hernia. Many circumstances render it expedient that a surgeon should bear in mind the similarity which exists between the tumours here alluded to and omental hernia.* For example, in re-

* Some years ago, a case of the following kind occurred:—A patient had a tumour in the course of the spermatic chord, attended by symptoms of strangulated hernia. The tumour was very properly cut down to, and no intestine discovered, but a piece of substance, having the characters of fat. This the surgeon proceeded to remove; but finding it to be so intimately connected with the chord, as not to admit of extirpation without injury to the latter, he removed tumour, testicle, and all.

moving a diseased testis, he might, as a matter of course, remove any co-existing tumour, in the course of the spermatic chord; but if such tumour presented no symptom or feeling of malignant character, if the history of the case shewed that the man had been ruptured, and moreover if the tumour of the chord had preceded the disease of the testis, the surgeon might then prudently leave it, and thus probably avoid opening a hernial sac, which has been unnecessarily done under such circumstances.

FEMORAL HERNIA.

A femoral hernia presents itself in the hollow of the thigh, immediately below, and near the pubal extremity of Poupart's ligament; its size usually varies from that of a hazel nut to a pullet's egg. In particular cases, its size may be increased to a much greater extent. I recollect once operating on a woman, who could not be induced, on her recovery, to wear a truss; the consequence of which was, that the hernia again descended, and in two years acquired a

magnitude equal to that of a child's head. The form of a femoral hernia is generally more or less round, sometimes it is oval; in the latter case, the long diameter may be vertical with respect to Poupart's ligament, or parallel with it. As the hernia increases, it may extend upwards, above, or transversely in the direction of Poupart's ligament, and in some instances (of comparatively infrequent occurrence) it extends to a considerable distance down the thigh. When the hernia is of small dimensions, its situation is inferior and lateral with relation to the inguinal ring, and mesial with respect to the femoral vessels; its proximity to either of these parts depending on its size. I should not feel myself justified in omitting to mention some extraordinary exceptions which have been observed in the Truss Society. There are no less than six instances recorded of herniæ occurring on the external side of the femoral artery. The cases were recorded by my predecessor, Mr. Taunton, senior, whose great familiarity with hernial tumours, combined with his accurate knowledge of the anatomical difficulties, calculated to impede or embarrass

any explanation of such cases, are to my mind satisfactory proofs that he could not have mistaken them. It should be recollected, that the number is but six in several thousand examples of femoral herniæ. This case can only happen, I conceive, from some imperfection in the structure of Poupart's ligament. I have seen many patients in whom the strength of support given by Poupart's ligament has been palpably less than is usual. A professional man once sent me a case from Cambridgeshire, in consequence of a very eminent surgeon in London having recommended a truss, the patient having no distinct hernia. When I examined the patient, I found that he had no hernia, but that there was a remarkable feeling of thinness and want of support along the line of Poupart's ligament, with a kind of impulse on coughing, very distinct from any thing which is discoverable in the natural condition of the parts. I forebore to apply a truss, because any thing like pressure, exclusively on the femoral ring, would certainly have increased the probability of rupture elsewhere. I therefore ordered a general support to be given to the

whole of the lower part of that side of the abdomen.

I now return from this digression to consider the other characters of femoral hernia. These will be modified by its contents. If they consist both of intestine and omentum, the case will differ very little from one in which omentum alone has descended; and to this I shall presently allude. An intestinal femoral hernia forms a tumour which is soft and elastic, and which imparts a sensation of central fluidity, there is also an impulse given in coughing, which is not however so strongly marked as in the inguinal hernia, neither does it retire so constantly as the last-mentioned disease, in the recumbent position. Where strangulation has taken place, in many cases the tumour will only possess those characters which I have already mentioned; in some, however, the following modifications or additions are observed:—The tumour may be excessively tender; there may be no perceptible impulse on coughing; there may even be discoloration of the integuments, which is generally indicative of a sphacelated condition of the parts beneath them, or at least

a state approaching thereto. The possibility of a hernia assuming this appearance, and thus simulating diseases for which it can seldom be mistaken, should not be forgotten.* In the reduction of femoral hernia, the patient should be placed in a half-recumbent position, the thigh should be bent on the pelvis, and carried towards the middle line of the body. If the hernia have risen above the line of Poupart's ligament, it should be first drawn downwards from this situation. Pressure should now be made by the points of two or three fingers, in a direction upwards and inwards. If the hernia do not readily recede, the fingers should be made to traverse the tumour in a circular manner, as it were, rolling the hernia beneath them; this plan will often succeed when the continuance of steady pressure has failed. I here wish to give a caution; viz., that the surgeon do not press the hernia into the hollow of the thigh, and thus persuade himself that he has reduced it, when in fact he has not done so.

* I recollect a case of this kind was once sent into St. Bartholomew's Hospital, in which, previous to its admission, a practitioner had applied a poultice.

I have known a very intelligent practitioner commit this mistake. The following case is interesting, as connected with this part of the subject:—A patient laboured under strangulated femoral hernia, for which, with other remedies, the taxis was employed. It seemed to the surgeon that at least a portion of the hernia had been reduced, and the simultaneous operation of aperient medicine served to complete the deception. The individual died, and I happened to be present at the examination of her body. There was a small intestinal hernia, in which, however, only a portion of the diameter of the bowel was included: this had sloughed. Scarpa and Heselback also make mention of cases, in which only a part of the diameter of the bowel was strangulated.

OF THE DIAGNOSIS OF FEMORAL AND INGUINAL HERNIA, WHEN THE FORMER SIMULATES THE LATTER VARIETY.

When a femoral hernia extends upwards above the crural arch, beneath which it has escaped from the abdomen, it may readily, by

an incautious examiner, be mistaken for the inguinal variety. The distinction is important, because it cannot be returned, however reducible, unless it be pushed downwards before any pressure is made in the direction of the femoral ring for its reduction. Without this previous step, the only result of any effort to reduce it, would be to press it more closely against Poupart's ligament, on which it lies.* If the history of the case be insufficient to explain its nature, the introduction of the forefinger into the inguinal ring will readily detect it by shewing that the hernia has not been protruded through that aperture. Should the patient be a female, this circumstance alone will be sufficient to excite a suspicion that the hernia is femoral, thus simulating the inguinal form of the disease. It sometimes happens, that a patient has an inguinal and femoral rupture on the same side of the body. Here the diagnosis is somewhat different, but I think in general, not difficult; for the reduction of either, and pressure on its corresponding aperture, whilst the patient is directed to make ex-

* Vide Sir Astley Cooper's Work.

ertions calculated to reproduce the hernia, will shew how much of the tumour belongs to the femoral and how much to the inguinal variety. Sometimes the two herniæ are sufficiently distinct to render any examination of this kind unnecessary. The comparative frequency of femoral and inguinal hernia in the two sexes respectively (in a large number of cases), will be seen in the extract from the books of the Truss Society, which is appended to this paper. I may here add, that I operated in the course of the last year on a case of strangulated hernia, wherein I had at first some difficulty in determining to which variety it belonged. The patient (a female) was enormously fat. Something which felt very like fat, or omentum, extended to a considerable distance on all sides of the femoral ring, and in the direction of the inguinal aperture there seemed to be a distinct body, or process, given off from the general swelling. The small size of the inguinal ring, and the vast depth of fat through which I had to examine it, rendered the case puzzling. I at length, however, by passing my finger beneath the loose skin from below upwards, convinced

myself that the protrusion had not taken place through the inguinal ring. I operated, therefore, as for femoral hernia. The exposure of the parts discovered a small femoral intestinal hernia, with a minute portion of omentum. The tumour derived a considerable addition to its magnitude from an unusual quantity of that fat which is so frequently found between the fascia propria and the sac, but even this did not render the tumour half the size of the general mass which was presented for examination before the operation. Its principal bulk was derived from an extraordinary accumulation of very dense adipose tissue, probably in part resulting from the pressure of a truss.

OF ENLARGEMENT OF THE VENA SAPHENA, SIMULATING FEMORAL HERNIA.

I have seen a peculiar enlargement of the vena saphena at the point of its termination in the femoral vein, forming a sort of pouch, and mistaken by an experienced surgeon for femoral hernia. The case was sent to me for a truss,

and the tumour felt so exactly like a small femoral hernia, that I should have applied one without exposing the parts (the usual mode adopted with regard to females in the Truss Society, where daily practice renders ocular demonstration unnecessary), had it not occurred to me that the tumour did not occupy the situation of the femoral aperture. The first thing which I observed on examining the parts, was that the small cataneous veins were in an enlarged condition, minute inspection shewing the thigh to be variously studded with little clusters of venous ramifications, and on tracing the vena saphena up the thigh, the nature of the tumour was sufficiently manifest. It should be remembered, that a tumour of this kind recedes on pressure, and in the recumbent position, and receives an impulse on coughing. Should there be any doubt on the subject, the tumour should be reduced, and pressure made in the precise situation of the femoral ring, when, if it be hernia, it will not re-appear so long as the pressure be continued; whereas, if formed by the vein, it will readily be produced by the upright position alone: added to this, pressure

on the femoral vein superiorly, would infallibly render the tumour tense, whilst pressure below would relax it. Further, the examination of the veins of the limb generally would, in all probability (as in the case to which I have referred), lead to a suspicion of the real nature of the affection.

OF THE DIAGNOSIS OF LUMBAR OR OTHER ABSCESS, FROM FEMORAL HERNIA.

I can easily conceive that (as in inguinal hernia) an abscess might so point as to be mistaken for a femoral hernia, and if an abscess originating in the loins have descended along the course of the psoas, and margin of the iliacus internus muscles, the mistake might more readily happen, should the matter point near the femoral ring. The abscess would afford impulse on coughing, and probably, at least, be somewhat influenced (I mean less prominent) by the recumbent position. The history of the case, the preceding pain in the loins or back, and the condition of the general health,

would almost certainly indicate the nature of the malady. If the tumour subsided in the recumbent position, it is very improbable that any pressure confined strictly to the femoral ring would impede its return, on resuming the upright posture. There is at present a case in St. Bartholomew's hospital, which is interesting in connexion with this part of the subject. A boy has a lumbar abscess presenting in the upper part of the left thigh, and a femoral hernia on the right side, which I am assured was very distinct before it had assumed some other characters which are at present superadded, and which I believe to depend on the presence of fluid, probably, of course, pus. In examining this boy, I could not prevent the return of some portion of the tumour in question; and on pushing it suddenly upwards the instant that he coughs, I can distinctly feel a kind of fluctuation which, I believe, does not depend on the hernia.

OMENTAL FEMORAL HERNIA.

I have already spoken of the inguinal form of omental hernia, and the points which require to be added in connexion with the femoral omental hernia, consist chiefly of those which distinguish it from the inguinal. Of these, the situation at the femoral ring is the most striking; it is usually much smaller in size, and of a more rounded form. From its situation, it does not admit of the same freedom of manipulation as is always practicable with a hernia occurring at the inguinal aperture, and thus the slippery feel cognizable in the inguinal species, cannot be recognized in the femoral. It may, of course, be reducible or irreducible, and, so far, may be moveable from without inwards, but the hernia admits of no lateral motion, or, if any, it is very restricted, for reasons which are readily suggested on considering the small aperture through which it has been protruded, and the nature of the superjacent parts. If it be adherent, or otherwise irreducible, the tumour has considerable firmness, and its surface,

instead of being remarkably smooth, (as we might be led to expect), is generally more or less irregular.

ENLARGED GLANDS.

These form the tumours which are most likely to be mistaken for the hernia last described. A gland is not unfrequently found occupying the femoral ring, and should this be the subject of enlargement, it will, of course, be precisely in the spot occupied by the hernia in question. As I have before observed, it is possible that an intestinal femoral hernia may be mistaken for an enlarged gland, but this seldom happens. The mistake almost always refers to a protrusion, either wholly consisting of omentum, or, at least, deriving its external characters from it. The gland will be harder, generally much more moveable, and almost always presents a smooth and uniform surface. There is no impulse on coughing. I am obliged to add, that the hardness is not invariable, as the gland may have suppurated

in its interior, without any tenderness or discolouration of the integuments; this is, however, an exception. In doubtful cases, the surgeon should inquire whether there be any ulcer or other probable source of irritation on the penis or the lower extremity—as the presence of such a cause would, of course, increase the probability that the tumour were glandular. Lastly, a hernia may exist, with an enlarged gland, so entirely in front of it that the character of the tumour may be altogether derived from the latter disease. In a case which occurred of this kind, there seemed to be a slight impulse on coughing, which never attends any tumour solely glandular; but it is impossible with certainty to distinguish such a combination. Fortunately, it is very rare. I would here observe, that whatever may be the apparent nature of a tumour occurring in this situation, should it co-exist with symptoms of strangulated hernia, no more time should be lost in ascertaining its contents by cautious dissection, than as if the tumour were obviously a hernia; for whilst no harm can result from a clean wound, even made unnecessarily, the

patient's life may be the sacrifice of any indecision leading to the further postponement of the operation. The following cases will illustrate some of the foregoing observations.

CASE OF REDUCIBLE FEMORAL HERNIA LYING BEHIND AN INFLAMED GLAND.

A woman applied to the Truss Society for information concerning a tumour in the groin. Examination detected an enlarged and inflamed gland, in the situation of the femoral hernia, there being nothing else remarkable about it, except a very obscure impulse on coughing; she was ordered to poultice the part, to keep quiet, to take some aperient medicine, and to come again in a few days. After an interval of a week, she again presented herself. On examination, the swelling of the gland had subsided, and we were thus enabled to detect a very small hernia, which was palpably intestinal.

CASES OF TUMOUR IN THE GROIN, ACCOMPANIED BY SYMPTOMS OF STRANGULATED HERNIA.

In the year 1821, I was sent for by Dr. Lidderdale, and Mr. Field, of Wilderness Row, to examine a tumour of the groin in a female, under the following circumstances:—The patient had for several days laboured under symptoms of enteritis, for which the usual remedies had been actively employed without having produced any remission in the symptoms. At this period, it was discovered that she had a tumour in the groin. On examining the patient, I found a moderately firm, smooth, somewhat elastic tumour, occupying the situation of the femoral ring, if I except, that it appeared to be rather nearer the femoral vessels than, as I conceived from its size, it ought to be, if hernia. I could also bring it forward, in a trivial degree, with a facility which I was disposed to think would be impracticable with a strangulated femoral rupture. There was a very obscure feeling of central fluidity, but no tenderness: the skin covering the swelling was quite natural.

She had now the ordinary symptoms of strangulated hernia, hiccough, nausea, vomiting of stercoraceous matter, and absolute constipation. The case was certainly ambiguous; trusting, however, to the majority of the characters I have mentioned, I gave an opinion that the tumour was not hernia; but added, that under the circumstances, no man would be justified in hesitating to cut down to it, and ascertain its real nature. The gentlemen before mentioned concurring in this view of the subject, I cautiously divided the skin and subjacent cellular tissue, and exposed a gland, with a suppurating cavity in its centre. Having continued the dissection, so as to convince myself that there was no hernia behind the gland, the wound was closed in the ordinary manner. Not the least curious part of this case was, that the patient, in a few hours after the operation, had evacuations from the bowels. The symptoms, however, returned, although she ultimately recovered. By a note appended to this case, I find that the renewed costiveness was at length overcome by the administration of opium, prescribed by my learned and respected colleague, Dr. Lid-

derdale, on this principle, that muscular structures are indisposed to act when their contractions are productive of suffering; but that, this removed, they become excitable by ordinary stimulation. Whether the principle be a correct one or not, it is not for me to determine; certain it is, that its application in this case proved successful.

Another case of a similar nature was soon after presented to my observation in a female servant of my friend, Dr. Tweedie. The difference being, that the symptoms were so modified as to lead to the suspicion that the tumour (if hernia) was omental.

CASE OF TUMOUR IN THE GROIN, OF AMBIGUOUS CHARACTER, WHICH PROVED TO BE STRANGULATED HERNIA.

As the whole of this case would occupy a considerable space, I shall only relate such particulars of it as apply to the subject in question. A woman, sixty-four years of age, sent for me, in consequence of her labouring under symptoms of strangulated hernia. I found a tumour

at the femoral ring, of an exceedingly ambiguous nature. It was characterized by an unusual degree of hardness and entire absence of elasticity. It had existed, she said, between two and three years, but had not of late acquired any increase of size. I may observe, that the gentlemen who saw the case with me, participated in the idea which I entertained of its doubtful character. We all inclined, however, to the side of its being hernia, provided the patient's history of the case were to be depended on. As the symptoms had existed for four entire days, there was very little time to be lost, if the case were hernia. The usual remedies employed in strangulated cases were quickly administered, including the tobacco enema by fumigation. This produced a temporary faltering of the pulse, but no change in the symptoms. As soon as she had recovered from the depressing influence of the tobacco, and about four hours after I first saw her, the operation was performed. On cautiously exposing the tumour, I found it to consist of an adherent omental hernia, with a small knuckle of intestine concealed behind it, and certainly

in the worst condition I ever saw, in a patient who ultimately recovered. The stricture was very tight, and required the greatest caution in its division: the piece of omentum was removed, and the intestine returned. This was a very unmanageable patient, and several untoward circumstances occurred during the after treatment. She had an attack of peritonitis; erysipelas and sloughing also supervened on the wound; but as I have before observed, she ultimately recovered.

OF ENCYSTED OR OTHER TUMOURS IN THE GROIN, WHICH UNDER CERTAIN CIRCUMSTANCES MAY BE MISTAKEN FOR FEMORAL HERNIA.

Encysted or other tumours may form in the vicinity of the femoral aperture, and under certain circumstances might be mistaken for femoral hernia; but were I to attempt to describe in writing the characters of every variety of tumour which might possibly present itself in this situation, I should not only fail in any useful accomplishment of the task, but venture on one, the perfect performance of which I believe

to be impossible. If with an encysted or other tumour in the groin, a patient were to labour under symptoms of strangulated hernia, it would of course be necessary to adopt the practice which has been already recommended. If a patient wished for any support, under the impression that a tumour were hernia, no truss should be applied, unless the reduction of the swelling demonstrated it to be so, with this exception. If the surgeon considered that the case were an irreducible omental hernia, or even that it were probably so, there would be no objection to his applying a light hollow-padded truss, which, whilst it afforded a certain degree of security against further protrusion should the case be hernia, would not injuriously press on the tumour, were it not so. I take this opportunity of mentioning a case in which a singular kind of tumour, lay across the groin, extending from the femoral vessels on the one side to the spermatic chord on the other; from which latter, some caution was necessary in detaching the cyst in which it was contained. The tumour occurred in a young man, and had existed for four years.

When he first observed it, it was not larger, he said, than a pea, but during the period above mentioned, it had acquired the size of a large egg. The most remarkable character of the tumour was its extreme hardness, feeling like a piece of stone beneath the integuments; it was not painful, but the patient was anxious for its removal, in consequence of the inconvenience occasioned by it in walking. I divided the integuments covering it, and, with the caution before mentioned, removed an encysted tumour. The cyst contained a very firm mass, apparently consisting of an intimate intermixture of osseous, horny, and cretaceous matter. A section has been made of it, and it is preserved in the museum at St. Bartholomew's Hospital.

OF ANEURISM OCCURRING NEAR THE GROIN.

I have mentioned aneurism as constituting one of the various tumours which occur in the groin, but I never saw any case which could be mistaken by the least experienced surgeon for hernia. The whole subject of aneurism is so

important, that no man should think of commencing practice without having given a very considerable portion of time to its study, so as to have rendered himself familiar with the various facts, recorded by the numerous authors who have written on the subject, and especially with the excellent work of Mr. Hodgson. To a person qualified by such study, that sort of account which is admissible here would be unnecessary, and to one less informed, it would convey but a small portion of that information which he ought to have acquired. I will, however, add a few brief remarks, which, although they may appear somewhat trite to a well-informed surgeon, may not on some occasion or other be absolutely useless, should they meet the eye of one of more limited information. The pulsation of an aneurism will be of itself sufficient to distinguish it from hernia. It should, however, be recollected that every pulsating tumour is not necessarily aneurismal; for a tumour of any kind may derive a pulsation from its contiguity to an artery, not always easily distinguishable from that afforded by aneurism itself. It is true, that where a

tumour lies loosely connected with the subjacent parts, it can readily be drawn from its situation, and in such a case, the cessation of pulsation will explain the kind of connexion with the artery whence the impulse has proceeded; but when a tumour (although loosely connected to the parts beneath it) is covered by aponeurotic structures, which is of course very likely to happen in the thigh, this cannot be accomplished. An aneurism which affords any pulsation at all,* pulsates with very nearly the same distinctness in all parts, whereas if the case be a tumour deriving its pulsation merely from its contiguity to an artery, the impulse will be most perceptible in the course of the vessel, less palpable as the finger is removed to a greater distance from it, and if the size of the tumour be so great as to allow of this distance being considerable, becoming almost or quite imperceptible. If a tumour lie beneath an artery, its distinction from aneurism is still more easy, for here the pulsation will be alto-

* I have thus expressed myself, because instances have occurred of aneurism, in which no pulsation was perceptible. The extreme rarity of such a case seems to justify my restricting a notice of it here to the bare mention of its possibility.

gether confined to the course of the vessel. I once saw a curious case of this kind in St. Bartholomew's Hospital, the nature of which was afterwards ascertained by a post mortem examination: a pulsating tumour presented itself in the thigh; but as a careful examination shewed that the pulsation was consequent on the femoral artery running over it, nothing was done. On dissection it was discovered that an abscess had formed in connexion with disease of the hip joint, and that the tumour consisted of pus, which had wrought its way downwards and forwards beneath the femoral vessels. Not long after this, my friend Mr. Kingdon shewed me a case of pulsating tumour in the thigh, which had been sent to him, as an aneurism. In this patient there were symptoms of disease in the hip, and as we did not consider the tumour to be aneurismal, we concluded on the probability of the case being of a similar nature to that which I have just mentioned. Mr. Kingdon has recently informed me that the result proved our conjecture to be correct. I have seen several cases of tumour in the upper part of the thigh rendered by their contiguity

to the artery, simulative of aneurism; they have generally been either enlarged glands, or the result of that inflammatory infiltration and thickening of the cellular tissue, which did not terminate in suppuration.

TRACHEOTOMY.

The circumstances under which a surgeon may be called on to make an opening into the larynx or trachea, are various. Tumours may press on the tube from without, or there may be disease within it. Foreign bodies sometimes accidentally fall into the trachea, requiring an opening for their extraction; and, lastly, in cases of asphyxia, the tube is sometimes opened with a view of instituting artificial respiration. The numerous occasions* on which the trachea has been opened under one or other of the foregoing circumstances, afford incontestable evidence that the operation in itself is free from danger, at least, as much so as any other which surgeons are in the constant habit of performing. My intention in this paper is only

* Vide Mr. Lawrence's paper in the sixth volume of the Medical and Chirurgical Transactions.

to speak of tracheotomy as forming part of the treatment of chronic laryngitis, and to endeavour to press the necessity of its early performance in that disease, where other remedies have proved unsuccessful. I am convinced that by a timely recourse to tracheotomy many lives might have been saved, which have been sacrificed to the fears of the patient, and sometimes, perhaps, to the indecision of the surgeon.

I shall briefly give the results of my own experience as to the causes and symptoms of chronic laryngitis, the morbid appearances after death, the treatment which I would recommend previously, and the conditions which I consider necessary to the success of the operation. In most instances, the disease appeared to have been excited by some catearrhal affection, producing, at first, uneasiness in respiration, with the well known vox ranca, which characterizes the complaint. These symptoms have subsided, but have been easily again excited; and almost certainly, in a greater or less degree, on the approach of winter. As the warm weather returned, they

have again retired, and in this way I have known some years elapse before the complaint has acquired the severity which induced the patient to seek professional assistance. When persons thus afflicted apply to a surgeon, there is seldom much time to be lost. The respiration has become habitually laborious, and accompanied with frequent paroxysms of irritation, which close the rima glottidis, and threaten immediate suffocation; and in one of these the patient expires. In some cases, the œsophagus sympathises with the larynx, which is evinced by occasional difficulty of deglutition. The larynx is sometimes tender on pressure. The morbid appearances consist of a much thickened condition of the mucous membrane, which is in general more or less ulcerated, but not constantly. Sometimes there are considerable growths from it, or depositions exterior to it. These may be more or less firm in texture, or even afford the resistance given by cartilage. The effect resulting from either, or all of these changes, is a considerable narrowing of the glottis; in some instances, the cartilages are perforated by ulceration, and certain ossified

portions of them necrosed. I have also seen an ulcerated opening communicating with the pharynx; the whole surface of the larynx is usually lined by a layer of pus, with a light froth intermixed with it. Too often the lungs are found also diseased, having either puriform effusion into the ramifications of the bronchi, or suppurating tubercles in their parenchymatous structure. I have, however, observed other cases where the lungs have been perfectly sound, nor do I believe that they generally become affected, in consequence of disease in the larynx abstractedly, unless it has been allowed to go on for an improper period. The habitual impediment to respiration, consequent on chronic disease of the larynx, must certainly keep the lungs in a state of irritation and disturbance, well calculated to induce disease; and if with such an exciting cause there be any pre-disposition to pulmonary disease, some morbid condition of these viscera will most probably supervene in the laryngeal affection, but this, so far from militating against the performance of tracheotomy, is, in my opinion, (subject to the conditions to be mentioned),

a very strong argument for its early adoption. When the disease has proceeded so far as to produce ulceration, I fear that nothing but tracheotomy will save the patient; but where there has been tolerably conclusive evidence of change of structure, and where the symptoms have been characterized by considerable severity and suffering, I have succeeded, in a few instances, by a plan which has consisted chiefly of the employment of very vigorous local depletion, and the subsequent use of mercury. My experience induces me to attach quite as much importance to the former as to the latter part of the practice, since the mercury has too often failed when employed alone. In order to illustrate the foregoing remarks, I may here mention the following case:—An unmarried woman applied to me in consequence of great difficulty of breathing, and, on visiting her, I found that she was labouring under all the symptoms of chronic laryngitis, in a very marked degree. On examining her larynx externally, there was some little tenderness, and the thyroid gland was in a degree enlarged, not, I think, from common bronchocele, (which appears to be

little else than an increased development of the natural structure of the part), for it felt harder than natural. She had been under the care of a medical man for six months previously, but had not, from her own account, experienced any benefit from the remedies employed. I did not expect that here any thing short of an opening in the trachea could be of service; she, however, perfectly recovered under the following treatment:—she was confined to a room of moderately warm temperature, she had twelve leeches applied every day for several days in succession, and then every other day for about a week; the leeches were re-applied at intervals, whenever her difficulty of respiration appeared in the least degree disposed to relapse. She had also a perpetual blister in the front of the neck. Her bowels were freely evacuated, and kept in a lax state for several days, after which her system was put under the influence of mercury, but, in this instance, there was very little ptyalism. Her diet was very spare, with the combined object of preserving a severely antiphlogistic regimen, and keeping the larynx quiet by restricting the

necessity for deglutition as much as possible. This treatment reduced her strength considerably, but it was perfectly successful. I saw this patient about three years afterwards; she had married, had borne a child, and remained perfectly well, having had no return of her laryngeal affection. The case was sent to me by Mr. Hills, of Islington, to whom the patient applied after the failure of those attempts at relief to which I have alluded. The treatment adopted in this case, is that which I would recommend previously to the operation; which (in the event of its failing) should be performed without delay. I think that the surgeon will seldom regret having performed it too soon, but may frequently repent that he had not instituted it at an earlier period. I will add an abstract of one other case in this place. A woman, thirty-three years of age, had for twelve years been subject to attacks of cough and dyspnœa on the approach of the winter season, which had gradually again subsided. In the winter of 1823-4, the cough was very severe, and attended by an augmentation of dyspnœa, which induced her to apply to me.

The air made a peculiar noise in passing the glottis, her voice was much interfered with, so that she spoke in a sort of hoarse whisper, the larynx was tender on pressure. She complained also of occasional difficulty of deglutition; but the passage of an instrument down the œsophagus discovered no obstruction in that tube. The treatment here consisted of spare diet, attention to the bowels, copious local depletion, and counter irritation. The benefit derived from this practice was so great, that strong hopes were entertained of her recovery, when she was unexpectedly attacked by a paroxysm of dyspnœa, and expired. The mucous membrane of the larynx was found much thickened with an ulcer extending into each ventricle. The lungs were diseased, with numerous small tubercles. I do not consider it necessary to give a detailed description of the operation of tracheotomy. A few remarks, however, may be useful. No operation is more easy of execution in the dead body, or under circumstances of suspended animation; but in the living body, and where the larynx is diseased, the case is widely different. I do not mean to

represent the operation as being a very difficult one, but that it is by no means so easy as it has been generally considered to be, and as I have heard it described by a distinguished lecturer. All operations are easily performed, when the surgeon is prepared for all the difficulties from which many of them are inseparable; but if any source of embarrassment occur unexpectedly, I need scarcely say, how soon a man of good nerve, and otherwise correct knowledge, may be baffled and confused. For these reasons, I shall mention those circumstances in which tracheotomy in a dead body, and in a person labouring under disease of the larynx, chiefly differs. In the dead body, the extension of the head backwards renders the trachea superficial, and it is, of course, quite stationary. The division of the skin, with a little separation of the cellular tissue and the edges of the subjacent muscles, readily exposes the white cartilaginous rings of the tube. In the living body, the first thing which strikes a person, who has neither performed the operation nor seen it executed by others, is the depth at which the trachea is placed from the

surface; for, instead of being able to make that extension of the neck to which I have alluded, we shall find that its degree will be very much restricted by the difficulty of respiration which it produces. The trachea will be found also to move upwards and downwards with considerable rapidity, so that some care is necessary, in order that the opening be made not only in the centre of its front aspect, but in accurate correspondence with the external incision. The thyroideal veins will frequently be in the way of the operator, and will sometimes cross the wound exactly at the point in which it is proposed to open the tube, and these veins, if there be any accompanying affection of the thyroid gland, will be considerably enlarged. In a case which I shall mention, a very considerable venous trunk crossed the trachea in this manner, which was pushed on one side by the handle of the scalpel. The division of these veins should be avoided if possible, as the operation has been known to fail in consequence of the blood issuing from them falling into the trachea, and suffocating the patient. This might certainly be prevented

by tying the vein which had been wounded; but the irritation which is sometimes consequent on the ligature of veins in other parts, renders it very desirable to avoid the necessity of such a measure. When the integuments are fairly divided, the operator seldom requires any other part of his knife than its handle until he arrives at the trachea, in which he should make a longitudinal slit correctly in its front aspect, large enough to admit a tube of the size figured in the plate. The shoulder of the tube should be padded by a few folds of lint and secured in its situation by tapes attached to the apertures, and fastened again behind the neck. This opening will answer every purpose in general; but if the circumstances were such that no convenient tube were at hand, it might be necessary to remove a portion of one or two of the cartilaginous rings, which has sometimes been done. It should never be forgotten, that the arteria innominata sometimes rises so high in the neck before its division, as to cross the trachea in the situation where the tube is opened in this operation. A similar distribution has also been observed with regard to the right carotid. Of

the first named variety I have seen three examples, and to shew the necessity of bearing these facts in our recollection, one of them occurred in a patient on whom it was proposed to perform tracheotomy: the particulars I shall presently mention. In concluding the remarks which I have to offer on the operation, I would observe, that no patient on whom it has been performed should be left one minute, for at least several days afterwards. The chief source of suffering and danger results from the liability of the tube to become clogged with mucus, which, if not instantly removed, might produce suffocation. Instead of annoying the patient by the repeated introduction of other tubes, or by the removal of one over the other, supposing that a double tube had been introduced, the following proceeding should be employed:—Two probes surrounded by lint well secured to them should be kept in readiness, their points being very slightly curved. The introduction of one of these, whenever the patient's respiration is becoming impeded by accumulation of mucus, will be found to answer every purpose. The secretion adheres to the

lint, and may be thus removed in considerable quantities at each introduction of the probe. In order that the larynx may be kept as motionless as possible, any attempt to speak should be strictly forbidden, low diet enjoined, and the necessity for deglutition avoided as much as may be practicable. Unless these injunctions are particularly given, a patient will soon begin to place a finger on the aperture of the tube, in order to ascertain the degree of improvement which may have been effected. My experience does not allow me to state the period during which the tube should be allowed to remain. After a fortnight or three weeks, the tube may be occasionally withdrawn to be cleansed; and on these occasions the articulation of a few words will afford an opportunity of judging of the condition of the larynx. In all probability it will seldom be safe to withdraw the tube altogether under two or three months, during which time I see no objection to the employment of such medical measures as are calculated to remove the disease of the larynx, provided the progress of the case be not satisfactory, and that the treatment be not

instituted until the disturbance, immediately consequent on the operation, has subsided. Previously to this, I should confine the treatment to the use of such measures as were calculated to ensure the regular action of the bowels, with occasional doses of calomel and opium, or Dover's powders at night, should the disturbed condition of the patient seem to require such assistance.

CASE.

I was called to a woman about fifty-four years of age, who had, for four years, on the approach of winter, been subject to catarrhal affections of the throat, the origin of which she ascribed to the application of a poultice to the front of the neck. She had now suffered for three months, under symptoms of laryngitis. She respired with great difficulty, and was frequently attacked by paroxysms of increased dyspnœa, threatening suffocation, during which she breathed with a noise which might be heard to a considerable distance. She expectorated

large quantities of mucus, was much emaciated, and altogether in a very weak condition. The remedies which I have usually employed in such cases having been unsuccessfully administered, an opening was made in the trachea a little below the cricoid cartilage. The only circumstance worth mentioning during the operation was, that a very large vein crossed the trachea close to the spot on which I proposed to make the opening, and which, as before observed, I pushed on one side with the handle of the scalpel. On the first introduction of the tube it excited so much irritation that I feared its presence would be insupportable. This, however, gradually subsided, until the tube was not only borne without annoyance, but with every relief to the respiration that could be desired. At first the tube was so frequently stopped by a copious secretion of frothy mucus that the introduction of the probe and lint was very often necessary, and that this might be done whenever it became requisite she had an attendant constantly in the room. In about a fortnight the tube was removed, cleansed, and replaced without difficulty, and every thing

promised success. The further progress of this case may be comprised in a few words. The tube had been kept in for about five months, with the exception of those occasions on which it was withdrawn to be cleansed: she felt very comfortable, and we were contemplating the final removal of it. At this time she used to walk about the streets, with a piece of gauze over the orifice of the tube, to prevent the ingress of foreign bodies; and, contrary to the repeated prohibitions which had been given her, would occasionally stop to shew persons the manner in which she breathed. The unnecessary exposure attendant on one of these occasions was followed by an attack of acute bronchitis, of which she died; and I had an opportunity of examining her body. The membrane lining the larynx was natural in colour, very slightly thickened, and not presenting a surface quite so smooth and polished as that which characterizes its healthy condition; but there was inflammation, ulceration, or deposition, sensibly interfering with or restricting the aperture of the glottis. The lining of the greater part of the trachea was very vas-

cular, and that of its minute divisions excessively so, with a very copious effusion of frothy fluid in the bronchial ramifications. The lungs in others respects were perfectly healthy.

CASE OF DISEASED LARYNX, IN WHICH THE ARTERIA INNOMINATA CROSSED THE TRACHEA IN THE SITUATION IN WHICH THIS TUBE IS OPENED IN TRACHEOTOMY.

A woman, between fifty and sixty years of age, laboured under symptoms of diseased larynx in a very severe degree. Her breathing was excessively laborious, and the paroxysms of threatening suffocation were very frequent, both by day and night. She was considerably emaciated, and in a much more exhausted condition even than the other patient whose case I have last mentioned. The thyroid gland was somewhat enlarged, in which change that portion which is sometimes found connecting the two lobes participated. There was also a tumour of a very firm texture apparently beneath the sterno-cleido-mastoideus muscle of the right side. Anxious to avoid an operation under

such unfavourable circumstances, the treatment of which I have spoken was employed, but no other benefit resulted from it than a slight alleviation of her sufferings. Under these circumstances, it was proposed that I should perform tracheotomy, and I met Mr. Stanley and Mr. Kingdon at the patient's residence with that intention, when, in feeling the neck in the course of the intended incision, I discovered that there was a very large artery ramifying in this situation. The vessel was so situated that scarcely an inch remained (the external incision included), for the performance of the operation. In consultation, therefore, the gentlemen before mentioned agreed that it would be better to abandon it altogether. I concurred in this opinion, 1st, because in so small a space, bounded inferiorly by a large artery, the operation would have been exceedingly difficult of execution; 2dly, because, supposing the operation safely completed, this artery would have been left at the margin of a suppurating wound; and, lastly, because the only measure by which these objections could have been obviated, (viz., the ligature of the vessel), presented in so

exhausted a patient no rational hope of success. When this poor creature died, which she did in one of the paroxysms of which I have spoken, I examined her body: her lungs were sound. In the larynx there was a growth of a very firm, almost cartilaginous, texture, which narrowed the glottis to such a degree, that it appeared quite astonishing that she could have lived so long with such an impediment to respiration as this tumour afforded. On removing the surface of the morbid growth, there was found a small suppurating cavity within it, as was the case with another tumour which lay exterior to the larynx, in connexion with the left lobe of the thyroid gland. The artery of which I have spoken, proved to be the innominata.

THE END.

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THE following STATEMENT of the situation and occurrence of HERNIA, at different periods of life, has been extracted from the Register of the Patients relieved by the City of London Truss Society, within *Twenty* Years.

In 49205 patients—39776 were males, and 9429 were females.

Males.	Females.			
7667	218	Left Inguinal	21519 Inguinal	24897 Single
13391	243	Right Inguinal		
152	1316	Left Femoral	3378 Femoral	
206	1704	Right Femoral		
16102	140	Double Inguinal		17442 Double
122	1078	Double Femoral		
464	1928	Umbilical		2809
143	274	Ventral		
1	3	Perineal		4
1	4	Obturator		5
25	43	have undergone operations		68
1130	721	with Umbilical and Inguinal Hernia, have been cured		1851
366	195	with Prolapsus Ani		561
	1510	with Prolapsus Uteri		1559
	11	with Prolapsus Vaginæ		
	38	with Prolapsus Vesicæ		
6	3	with Varix of the Abdominal Veins		9
39776	9429			49205

IN ADDITION TO THE ABOVE STATEMENT, THE FOLLOWING VARIETIES IN THE SITUATION OF THIS MALADY HAVE BEEN NOTICED—VIZ.

In 485 Males,	
101	Had Left Inguinal and Right Femoral Hernia,
74	Left Inguinal and Left Femoral Hernia,
5	Left Inguinal and Double Femoral Hernia,
3	Left Inguinal and Ventral Hernia,
6	Left Inguinal and Umbilical Hernia,
1	Left Inguinal Hernia and Prolapsus Ani,
1	Left Inguinal, Umbilical, and Ventral Hernia,
83	Right Inguinal and Left Femoral Hernia,
16	Right Inguinal and Right Femoral Hernia,
15	Right Inguinal and Double Femoral Hernia,
5	Right Inguinal and Ventral Hernia,
18	Right Inguinal and Umbilical Hernia,
4	Right Inguinal Hernia and Prolapsus Ani,
2	Right Inguinal and Right Ventral Hernia,
43	Double Inguinal and Right Femoral Hernia,
38	Double Inguinal and Left Femoral Hernia,
12	Double Inguinal and Double Femoral Hernia,
9	Double Inguinal and Ventral Hernia,
1	Double Inguinal and Double Ventral Hernia,
35	Double Inguinal and Umbilical Hernia,
9	Double Inguinal Hernia and Prolapsus Ani,
1	Double Inguinal, Umbilical, and Ventral Hernia,
1	Left Femoral and Umbilical Hernia,
1	Right Femoral and Ventral Hernia,
1	Right Femoral and Umbilical Hernia,
1	Right Femoral Hernia outside of the Femoral Vessels.
485	

In 181 Females,	
10	Had Left Inguinal and Left Femoral Hernia,
25	Left Inguinal and Right Femoral Hernia,
1	Left Inguinal and Double Femoral Hernia,
1	Left Inguinal and Umbilical Hernia,
1	Left Inguinal Hernia and Prolapsus Uteri,
5	Right Inguinal Congenital Hernia,
6	Right Inguinal and Left Femoral Hernia,
5	Right Inguinal and Right Femoral Hernia,
1	Right Inguinal and Double Femoral Hernia,
7	Right Inguinal and Umbilical Hernia,
1	Right Inguinal and Ventral Hernia,
1	Right Inguinal Hernia and Prolapsus Uteri,
7	Double Inguinal and Umbilical Hernia,
4	Double Inguinal and Ventral Hernia,
1	Double Inguinal Hernia and Prolapsus Uteri,
22	Single Femoral and Umbilical Hernia,
8	Single Femoral and Ventral Hernia,
1	Left Femoral and Double Ventral Hernia on the right side
1	Left Femoral and Right Obturator Hernia,
3	Left Femoral Hernia on the outside of the Femoral Vessels,
2	Left Femoral Hernia and Prolapsus Uteri,
4	Right Femoral Hernia and Prolapsus Uteri,
1	Right Femoral Hernia on the outside of the Femoral Vessels,
1	Right Femoral Hernia on inside and outside of the Femoral Vessels,
1	Right Femoral Hernia, Prolapsus Uteri, and Prolapsus Vesicæ,
10	Double Femoral and Umbilical Hernia,
3	Double Femoral and Large Ventral Hernia,
4	Double Femoral Hernia, and Prolapsus Uteri,
2	Double Femoral Hernia, and Prolapsus Ani,
14	Umbilical and Ventral Hernia,
4	Umbilical Hernia and Prolapsus Uteri,
1	Ventral Hernia and Prolapsus Uteri,
4	Prolapsus Uteri and Prolapsus Ani,
18	Prolapsus Uteri and Prolapsus Vesicæ,
1	Prolapsus Uteri and Prolapsus Vaginæ.
181	

Three Thousand One Hundred and Seventy-nine Patients had Congenital Hernia.

4164	Patients were relieved with Trusses under 10 years of age.
2690	between 10 and 20
4999	20 and 30
7826	30 and 40
8803	40 and 50
8047	50 and 60
5743	60 and 70
2236	70 and 80
250	80 and 90
9	90 and 100
44767	