

On perforation and division of permanent stricture of the urethra by the lancetted stilettes : with observations on the nature and treatment of spasmodic and inflammatory stricture, and on various other urethral affections / by R.A. Stafford.

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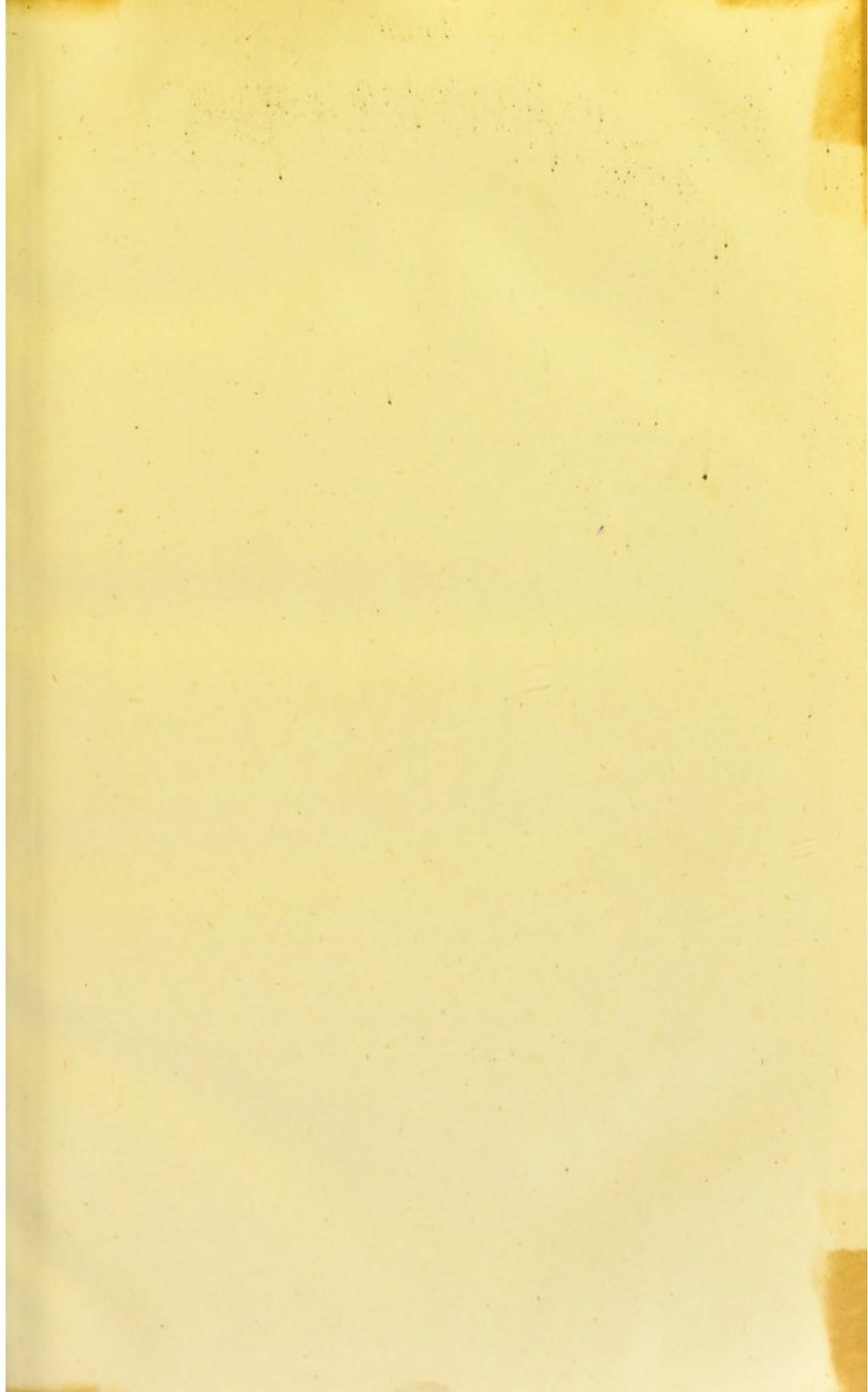


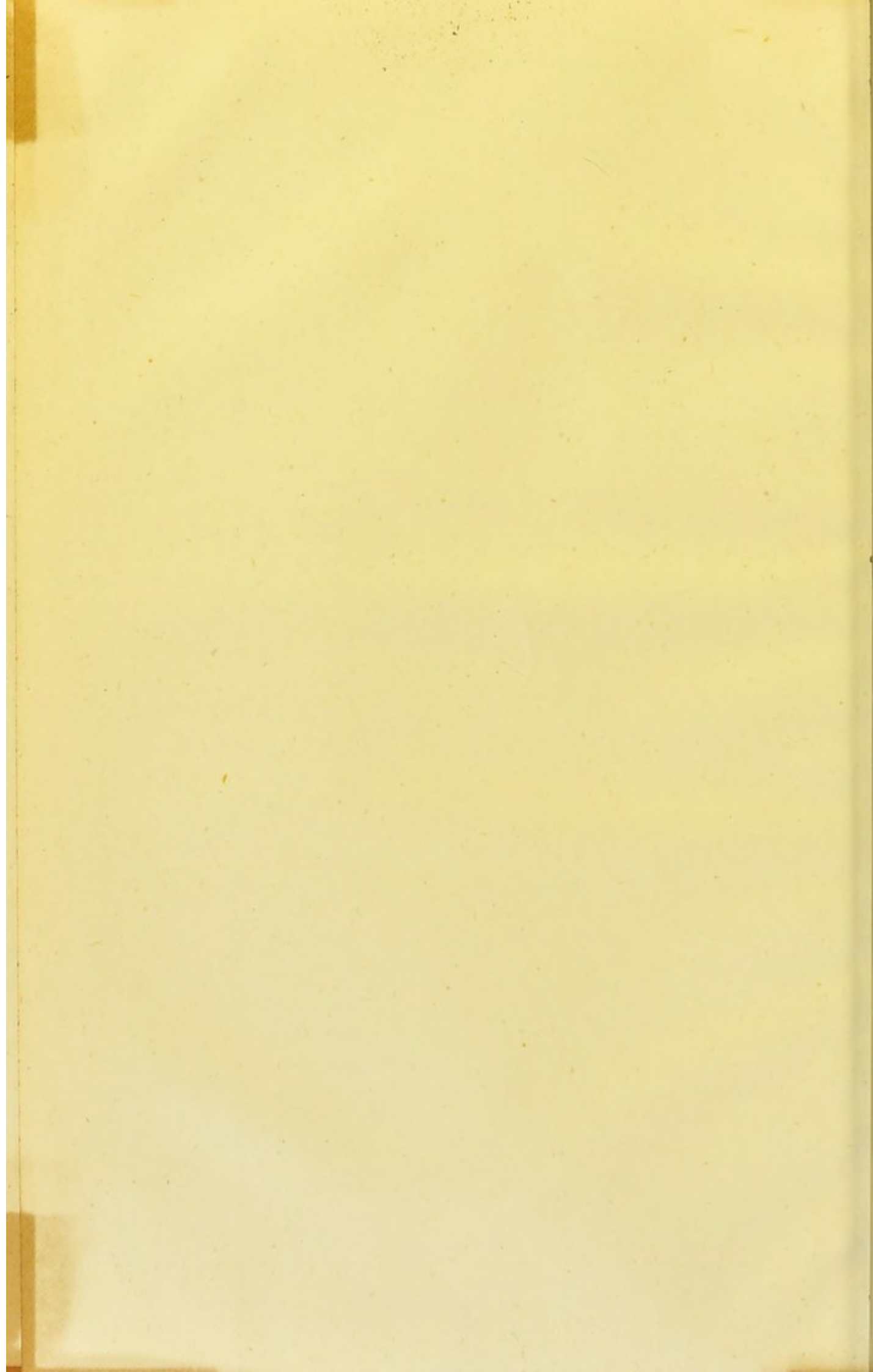
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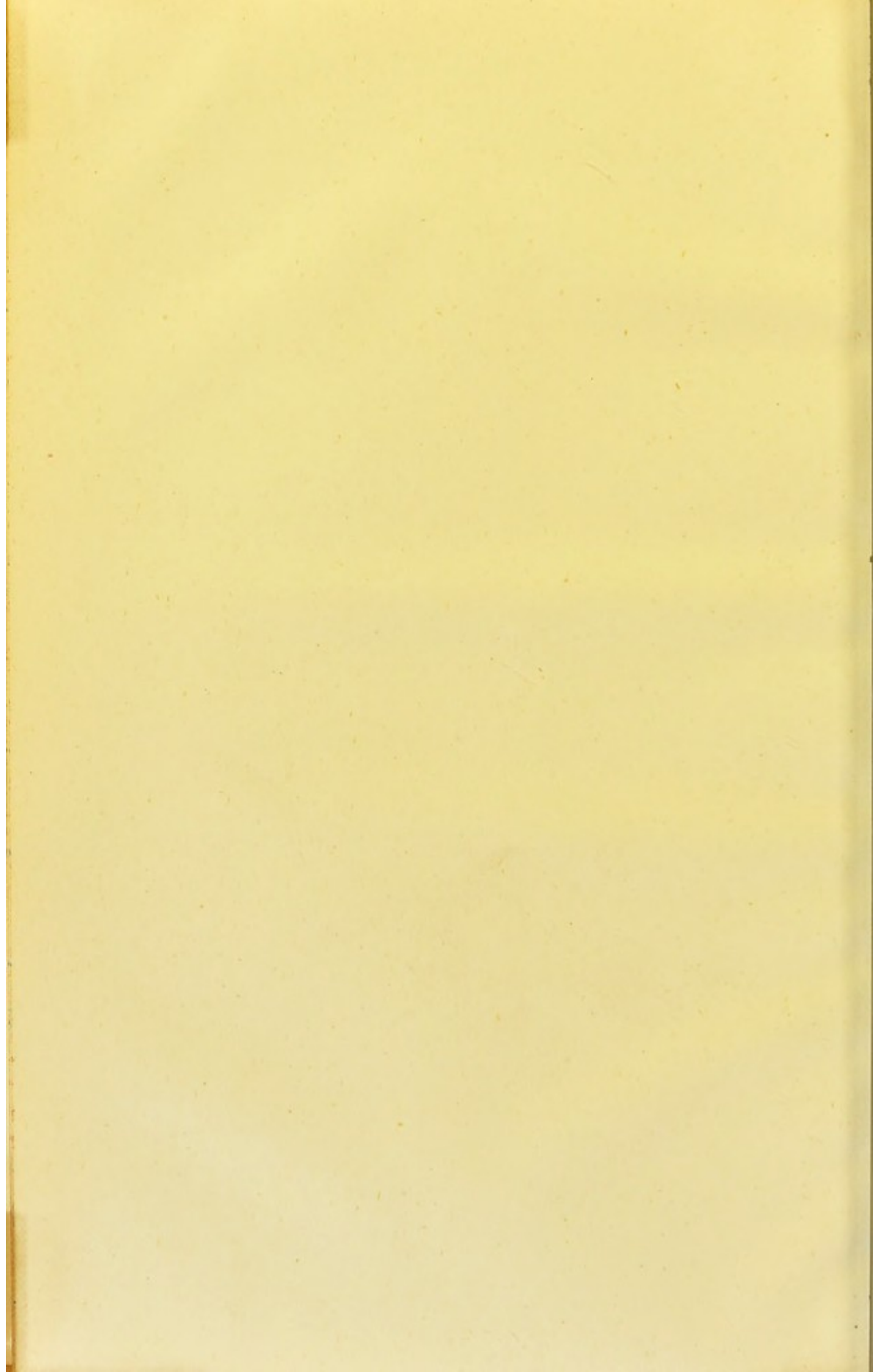






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ON
PERFORATION AND DIVISION
OF
PERMANENT STRICTURE
OF THE
URETHRA

BY THE
LANCETTED STILETTES:
WITH
OBSERVATIONS ON THE NATURE AND TREATMENT
OF
SPASMODIC AND INFLAMMATORY
STRICTURE,
AND
ON VARIOUS OTHER URETHRAL AFFECTIONS.

By R. A. STAFFORD,

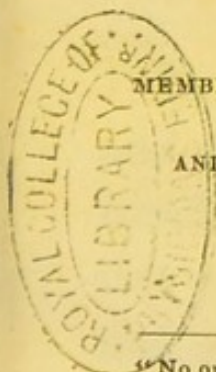
SURGEON TO THE ST. MARYLEBONE INFIRMARY,
MEMBER OF THE ROYAL COLLEGE OF SURGEONS, FELLOW OF THE ROYAL
MEDICAL AND CHIRURGICAL SOCIETY,
AND FORMERLY HOUSE-SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

THIRD EDITION.

"No one can have thoroughly studied his profession without perceiving how susceptible it is of improvement—without discerning how inadequate the efforts of an individual must be towards the accomplishment of this purpose—and consequently without feeling an earnest wish to engage general co-operation in this desirable object."—
ABERNETHY, *Preface to Surgical Observations*, p. 10, 4th Ed.

LONDON:
LONGMAN, REES, ORME, BROWN, GREEN, AND LONGMAN,
PATERNOSTER - ROW.

1836.



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PREFACE

TO THE

THIRD EDITION.

ON a Third Edition of this work being called for, it is most satisfactory to me, as the author of a new and apparently difficult mode of treatment, to be enabled to add conclusive proofs, not only of its efficacy and safety, but of the rapidity and permanency of the cure.

From an enlarged and increased experience, and from the favourable result of the cases which I have published, I am led to give this opinion; and I may state confidently, that since my invention of the instruments I have not yet had in my own practice one unsuccessful case, and that no mischief has arisen from the operation. In no instance has a false passage been made, nor have extravasation of urine, hæmorrhage, or any other bad

symptom, ensued. It will be observed, that strictures which had existed for years were removed with but slight pain, and in a very rapid manner; some having yielded to the treatment in the course of a month or six weeks, and others even in a much shorter space of time; and it is very satisfactory to me to be enabled to add, without the necessity of the patients confining themselves to their apartments. It gratifies me to observe that some of the most eminent of my professional brethren acknowledge the value of this mode of treatment, and the more so, as I have endeavoured, to the best of my abilities, and in as open and candid a manner as possible, to lay before them all I know on the subject.

It will be seen that I have altered the title of the work. I have also added much new matter, and described what appeared to me to be new forms of the disease.

The Cases, a great number of which have been sent to me by other surgeons, I have given with fidelity as they occurred. They are very numerous, and an objection might be raised to my having related so many; but as the system was novel, I have been induced to do it, being

aware that every additional fact must tend to establish the mode of treatment. Some of them I have stated minutely, some more generally, and others briefly, and that with a view of avoiding the tedium occasioned by repetition.

The last chapter of the work treats solely of the division of Permanent Stricture; for which I have invented new instruments, that I have termed the Lateral-bladed Stilettes. These I have found to be much more expeditious than dilatation, and the old methods of treatment, in the removal of every species of permanent stricture.

R. A. S.

28, OLD BURLINGTON-STREET,

November, 1835.

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CONTENTS.

CHAP.	Page
I. Of Spasmodic Stricture and its causes;—of the “Mixed Case,” or Inflammatory Stricture;—of Hæmorrhagic Stricture;—of Permanent Stricture and its causes;—and of Excrescences	1
II. Of the Situation of Stricture;—its Symptoms;—and the Morbid changes in consequence	22
III. Treatment of Spasmodic and Inflammatory Stricture	35
IV. Of the Treatment of Permanent Stricture—Description of the Urethral Perforator, the Double-lancetted and the Lateral-bladed Stilettes	50
V. Simple Perforation: Cases.—Gradual Perforation: Cases.—Perforation of Stricture from accident: Cases.—Perforation of Hæmorrhagic Stricture: Cases.—Perforation and division of more Strictures than one in the same Urethra: Cases.—Perforation of the continuous or long Stricture: Cases.—Perforation of the third or middle Lobe of the Prostate Gland: Cases . . .	75
VI. On Division of Permanent Strictures;—Cases and Remarks;—Conclusion	254

CONTENTS

1. Of Spontaneous Stricture and its causes;—of the "Milky Way," or Inflammatory Stricture;—of Hemorrhoidal Stricture;—and of Acute Stricture and its causes;—and of Exercises 1

II. Of the Situation of Stricture;—the Symptoms;—and the local changes in course 23

III. Treatment of Stricture and Inflammation 30

IV. Of the Treatment of Urinary Stricture;—Description of the Urinary Stricture; the Double-barrelled and the Lateral-barrelled Stricture 50

V. Single Prostate: Cases.—General Prostate: Cases.—Prostate of Stricture from accident: Cases.—Prostate of Hemorrhoidal Stricture: Cases.—Prostate and division of more Strictures than one in the same Urinary: Cases.—Prostate of the continuous or long Stricture: Cases.—Prostate of the third or middle lobe of the Prostate Gland: Cases 75

VI. On Division of Urinary Strictures;—Cases and Remarks;—Conclusion 364

ON
PERFORATION AND DIVISION
OF
PERMANENT STRICTURE
OF THE
URETHRA,
&c. &c.

CHAP. I.

*Of Spasmodic Stricture and its Causes;—of the
“Mixed Case,” or Inflammatory Stricture;—of
Hæmorrhagic Stricture;—of Permanent Stric-
ture and its Causes;—and of Excrescences.*

It is proposed, in the present Treatise, to make a few observations upon Strictures of the Urethra generally: but having invented certain instruments, which I have found effectual in curing the most obstinate and distressing forms of Permanent Stricture, it is to that class I am more particularly anxious to direct the attention of the profession. The unyield-

ing nature of this complaint, the inefficacy of the usual modes of treatment, and the intense suffering, as well as the extreme danger, of the patient, will, I trust, be considered amply sufficient to warrant me in communicating the result of my experience to the public.

Strictures of the urethra have been divided by Mr. Hunter into three different classes,—the Permanent, the “Mixed Case,” and the True Spasmodic. I shall first make some remarks on Spasmodic Strictures, as being the most simple. This form of stricture arises from the whole, or part of the canal of the urethra, being so highly irritable that the slightest stimulus will cause it to contract, and occasion the stream of urine to be suddenly obstructed. The disposition to spasm exists according to the constitutional excitability of the patient, or to the peculiar state of the canal; and it usually occurs in that portion of the urethra which, under natural circumstances, is the most irritable. Spasmodic strictures are very constantly the result of faulty digestion; and this is explained from the morbid irritability of the stomach extending its influence and sympathies to all other structures. Hence I

have known a spasmodic stricture follow from eating of high-seasoned dishes and indigestible food, such as pastry, &c.; or from drinking subacid liquors, such as champaign, cider, &c.; and the proof that the spasm, in these cases, depends solely upon this cause, is shewn from the fact, that if the irritating substance be carried off, or the acid neutralized, the spasmodic state of the urethra ceases. In some persons, the mere acrimony of the urine will bring on this affection. Faulty digestion, and many other causes, may produce this acrimony; and there are few of us who do not, at different times, experience changes in the secretion of this fluid. It at one time shall be limpid and unirritating, and at another so heated as to cause a burning sensation as it makes its exit. This irritating quality arises partly from the salts of the urine being in greater quantity, and partly from there being less fluid to hold them in solution. If these two causes are combined, namely, the predisposition from increased general irritability of the system, and a concentrated state of the urine, we cannot be surprised if the urethra be excited to inordinate contraction, and the patient suffer from spasmodic stricture. Besides this stimulating condition of the urine,

where the general irritability exists, any other local cause will occasion stricture. Hence a bougie may become this cause, and we find at one time it will pass freely, while at another it will be arrested. The force of the contraction will also vary: in some cases a steady and continued pressure for a short time will overcome the spasm; in others, the stricture will resist it altogether, although the force employed to pass the bougie shall have been sufficient to contort it.

Much discussion has arisen as to the manner in which this contraction in the urethra is produced; and it has been argued by some that it never takes place in a situation anterior to that part of the urethra which is not surrounded by the accelerator urinæ, or ejaculator seminis, the sphincter vesicæ, the compressor prostatae, and the levator ani muscles, and that these alone are the cause of the contraction. By others, spasmodic stricture is asserted to occur in the other parts of the canal—in muscular fibres, which they have supposed encircle the urethra throughout its whole length. From the latest examination of its structure, made by Mr. Bäuer with the microscope, under the direction of Sir Everard

Home, the latter gentleman infers that * “the urethra, along its whole extent, being made up of two parts—an internal membrane, and an external muscular covering”—and the muscular covering, “being made up of fasciculi of very short fibres, which appear to be interwoven together, and connected by their origins and insertions with one another,” the disposition to spasm exists in these. It is not necessary, however, for my present purpose, to inquire into the merits of these several opinions. I would only observe, as it appears to me, that the texture of the urethra is so very minute that it would be difficult to form any accurate opinion of its real structure, and consequently of the causes of spasm in this canal. It is sufficient to know that it possesses a contractile tendency to an extreme degree; and, as far as my own experience goes, I should conceive that the whole of the urethra may be affected by spasm, but that it is more active at that part of it where it is surrounded by the muscles necessary to the performance of its natural functions.

The “Mixed Case,” according to the ex-

* Home on Stricture, vol. iii. p. 26—28.

planation given of it by Mr. Hunter*, is "composed of a permanent stricture and a spasm;" includes all those strictures where inflammation is present without an organic change having taken place; and all those, also, where the part has only undergone a slight alteration of structure. It is obvious that the term "Mixed Case," if it be taken literally, gives a very vague idea of this class of the complaint. Perhaps the term Inflammatory Stricture would have led to less confusion, as indicating the most usual condition of the urethra in this disease, and also leading to the mode of treatment most applicable in these cases. The "Mixed Case," or, as I have called it, Inflammatory, may be considered as the first stage towards a permanent stricture. In inflammatory stricture the part is swollen, its vessels enlarged; and, very possibly, at the same time there may be a partial change of structure, and thus the calibre of the urethra is diminished. In strictures of this kind it is some time before the part can return to its natural state. On the contrary, in the spasmodic, the contraction of the urethra ceases at the same time with the spasm. This, then,

* Hunter on Venereal Disease, p. 111.

seems to mark their difference, although, in practice, it is often difficult to distinguish the one from the other.

The Hæmorrhagic Stricture, as I shall term it, or where the part bleeds profusely immediately on its being touched by a bougie, appears to arise from two causes. First, from the coats of the vessels having become so thin from distention, that the least touch breaks or erases them; and, secondly, from the part having become changed in structure, resembling, perhaps, the vascular spongy substance of the bleeding hæmorrhoid. Unless we could frequently examine this disease in such cases, it would be difficult to decide positively on the nature of the structure of the part; but I am led to draw such an inference from the dissection in Sir Herbert Sawyer's case. In this case, there was an excrescence of an extremely vascular structure, through which the urine passed, and which protruded into the middle of the canal. It resembled the glans penis of an infant, and when touched by the bougie, the hæmorrhage was so terrific that it would have led one to have imagined that some large vessel had been

wounded. There is but little doubt that the blood issued from the congeries of vessels which formed the excrescence. Where the hæmorrhage occurs in the more simple form of stricture, it is most probable that it is owing to the attenuated state of the vessels, and that the instrument employed produces a rupture of their sides. Hence the same may be observed in wounds of other mucous surfaces, when inflamed or congested; as in the nose, for instance, or the mouth. It would appear from the cases I shall presently relate, that if a simple incision be made into the part under such circumstances, it will not bleed so much as when a blunt instrument touches it. It is probable that the mouths of the cut vessels contract, whilst those whose sides are erased continue pouring out blood.

In the organized or permanent stricture, the contraction has become thickened and indurated, being subjected, however, to numerous variations as to the form of disease. The contracted portion may appear, as Mr. Hunter expresses it*, merely “as if the part had been surrounded by a piece of packthread;” it may

* Hunter on Venereal Disease, p. 113.

be formed only on one side of the passage ; or it may extend from one or two inches, and even farther, along the canal. The former of these, where the part appears as if it were surrounded by a piece of packthread, is the simplest form of permanent stricture. In this variety the membrane appears to be protruded forward into the canal, by the parts immediately beneath it having become enlarged and indurated from deposition of lymph, without the membrane itself having participated in the change of structure. In this description of stricture the contraction entirely encircles the urethra ; but there is another variety, where it exists only on one side of the passage ; and thus a duplicature of membrane, with a hardened base, juts forward into the canal. This sort of stricture exactly resembles the one that encircles the urethra, excepting that it occupies a portion, instead of the whole circumference of the passage ; and it seems to correspond with what M. Ducamp and other French surgeons term a “ a bride*.” Brides

* “ Elles sont parfois supportées par une base large, vasculaire, saillante dans l'intérieur du canal, évidemment formée par la membrane muqueuse, épaissée par des inflammations répétées.” — *Ducamp, Traité des Retentions d'Urine*, p. 13.

in the urethra, according to M. Ducamp, are usually supported by a large base, vascular, and jutting out in the canal, evidently formed by the mucous membrane, thickened from repeated inflammations. This description seems to answer to those contractions which take place on the side of the canal; and it appears to me that they are formed in the same manner as the circular stricture; the parts around become enlarged, and the membrane is pushed, as it were, before it.

There is another description of stricture, which I shall call the *Permanent Elastic*. This is of the same kind as the Permanent; but its peculiar characteristic is, that it will admit through it a bougie of a tolerably large size, and yet immediately, or soon after its withdrawal, it will contract to its former calibre. This arises from the structure of the diseased part surrounding the canal being of that elastic nature, that it more or less resembles a girdle of Indian-rubber encircling the urethra. As soon, therefore, as the dilator is removed, it gradually returns, according to the elasticity of the contraction, to its former circumference. This contractile disposition may vary. In some instances it occurs almost immediately.

after the withdrawal of the bougie ; in others, it gradually takes place, becoming less and less, making the interval of a day, two days, a week, or even a month, and the time may even be longer.

The description of stricture I have just mentioned, becomes one of the most harassing nature. The patient is constantly passing bougies, and yet never makes any progress towards the cure of his complaint. He finds he can introduce through the stricture a tolerably large bougie or catheter, and that the size can be increased, and still he gains no ground : the disease remains the same, and he goes on passing instruments until the end of his life. In this wretched state, symptoms occur which endanger his life, or keep him in constant misery. The prostate becomes enlarged, the bladder diseased, the kidneys and ureters are affected ; and, in short, the whole urinary organs suffer some change detrimental to his health.

The contractions, which occupy a considerable extent of the urethra, are generally extremely irregular ; and their structure approaches to that of cartilage, being indurated

and tough. In these cases, which are usually of long standing, the membrane likewise partakes of the change: it is firmer and thicker than natural; and should the diseased part be so situated that it can be pressed between the fingers, it feels as if a piece of whipcord or catgut were placed in the urethra, perfectly unyielding to the pressure. The passage, at the thickened portion, is so much obstructed that it will scarcely admit through it the slenderest bougie. The urine can only be filtrated through it in so small a quantity, that it flows from the penis drop by drop, or in a stream not larger than a hair; and the canal, at the part, is so unequally thickened that it is rendered tortuous.

Different opinions have been entertained as to the manner in which a permanent stricture is formed. Sir Everard Home seems to think that* “a permanent stricture is that contraction of the canal which takes place in consequence of coagulable lymph being exuded between the fasciculi of muscular fibres,” which have been before alluded to, “and upon the internal membrane, in different quantities, ac-

* Home on Strictures, vol. iii. p. 31.

ording to circumstances, and in the same proportion diminishing the passage for the urine at that part, and completely closing it," apparently without any reference to the membrane itself undergoing a modification of structure. The opinion, also, that the parts surrounding protrude it forward, without the membrane partaking of the disease, is entertained by many others ; and it certainly has this appearance when the alteration is in the first stage. In recent cases, it is probable that the alteration of structure in the membrane is so slight that it cannot be perceived : in very protracted cases, however, it undoubtedly does undergo a change : it is thickened, and of a harder structure than natural ; and to prove this, I have only to refer my readers to many of the preparations in the College of Surgeons. In some of these cases, it may be observed that the membrane lining the urethra is much thicker than it ought to be, and that its natural character is quite altered : indeed, I cannot conceive, when the parts are so intimately connected as the membrane and the part it covers, how the one can be affected without the participation of the other. Sir C. Bell, in his excellent work, dwells particularly on the long

and callous stricture. He conceives* “that the contractions of the urethra, which extend to a considerable length along the canal, are produced by more severe attacks of inflammation than those which produce common strictures;” and that “this sort of callosity differs from the more common strictures in this—that, in consequence of the spongy body which surrounds the canal of the urethra often partaking of the effects of inflammation, the cells are obliterated; and what was loose, spongy, and dilatable, has become condensed and rigid.” So far as the alteration of structure is concerned, I agree in this opinion; but, from the mode in which parts in general become condensed, I am inclined to think that the inflammation, though it extends to a greater length along the tube of the urethra, is not severe, but of a very chronic description; otherwise ulceration or suppuration must necessarily occur. It appears to me that permanent contractions of the urethra are produced in the same manner as permanent contractions of other mucous canals—the œsophagus, the intestines, &c. (with the exception of schir-

* Letters on Urethra, pp. 19 & 20.

rous contractions) ; that a continued chronic inflammation having existed for a considerable time in the part, its vessels are enlarged, and lymph is very gradually deposited in its interstitial structure. This slowly becomes organized and condensed ; and, by its increase, the canal in progress of time is entirely blocked up. The membrane, therefore, and the part immediately surrounding it, are rendered more and more indurated, in proportion to the length of its continuance, till it even assumes a hardness belonging rather to cartilage than any other structure.

The causes that may be assigned for the urethra being brought into a state favourable for the production of permanent stricture, are numerous. Whatever will give rise to inflammation of any particular portion of it, whether it has a specific, or whether a spontaneous origin, will equally tend to cause an alteration of structure at the affected part. Thus, whether it be from gonorrhœa, or whether from a blow externally upon the perineum, its effects are the same. Gonorrhœa, however, from the frequency of its occurrence, is the most common foundation of a permanent stricture ;

because, being of an inflammatory character, it has a tendency to alter the structure of the canal; for, although it appears to be entirely confined to the membrane, yet when we consider the intimate connexion subsisting between it and the part it covers, we may reasonably conclude that both are affected by the inflammation. When the first stage has subsided, it is probable that gonorrhœa leaves behind it a chronic form of inflammation, which is peculiarly favourable to that deposition of lymph and thickening of the parts which is the cause of the canal being afterwards permanently narrowed. This seems to be exemplified by the circumstances attending gleet, for it frequently happens that when this discharge has continued for a considerable time, it is kept up in consequence of the formation of a stricture. During the time I was house-surgeon to St. Bartholomew's Hospital, and in my own practice since, I have had frequent opportunities of examining patients who have been suffering from a gleet of one or two years' standing, and all the remedies used had been ineffectual. When a bougie was passed, a stricture was usually discovered in some part of the canal. Another

cause of the formation of permanent stricture is the employment of too powerful astringent injections in the cure of gonorrhœa. These, no doubt, will stop the discharge, but they induce at the same time a chronic inflammation in some part of the urethra, which at length terminates in a permanent contraction.

Permanent strictures may also be brought on from external violence upon the perineum, and these cases are generally of the severest description, as not only is the part immediately surrounding the canal injured, but also the whole of the part between that and the perineum. Sailors, from their liability to fall from the rigging, frequently meet with accidents which terminate in the aggravated form of this disease. A stone in the bladder, or lodged in the urethra, will bring on a chronic inflammation, which will also give rise to it. Passing sand, and the too frequent indulgence in venereal pleasures, will have the same effect. Those, also, who are of a sedentary habit, are often the subjects of this complaint. It is probable that from the constant position of sitting, a determination of blood to the perineum may be brought on, or perhaps the urethra may be irritated from the continual

pressure of the seat. Those who have diseases of the rectum are very much disposed to stricture, and we often see it in combination with a very costive habit of body—with piles, and with fistula. The intimate vascular connexion of the urethra with the rectum is a very probable cause of this sympathy. Other particular causes, no doubt, could be adduced, which would account for the formation of strictures in the urethra: it is useless, however, to seek for them; for inflammation being the groundwork of this disease, whatever will give rise to it in the urethra, will also give rise to a permanent contraction of that canal.

There are other diseases of the urethra besides its mere contraction. Sir C. Bell mentions a description of case, where it is narrowed, and attended with a wasting of the spongy body surrounding it at the same time. He says*, “I have found, on dissection, from two or three inches of the canal much diminished in capacity, and rigid; and all around this part of the urethra, the spongy substance obliterated.” Such a case exactly as this I acknowledge I have never met with, but I have

* Letters on the Urethra, p. 22.

seen one where the whole canal was in a slight degree narrowed, and certainly, from the dense and rigid state of the spongy body surrounding, it appeared as if it had been obliterated. I have no doubt, however, that this thickening and hardened state was produced from continued chronic inflammation.

The urethra is said to be occasionally obstructed by a kind of excrescence which Mr. Hunter termed *Caruncle*. The caruncle is a disease of a very rare occurrence, although the ancients, who no doubt mistook the common indurated contractions for it, considered it to be very common. There is only one specimen of it in the whole of that splendid collection of diseases of the urethra in the College of Surgeons, and this being accompanied by an irregular thickening of the canal, makes it difficult to ascertain its real character. Almost all authors, however, make mention of it; and, from their account, it seems to be the same description of growth as the polypus from the mucous membrane of the nose, or the uterus. The existence of an excrescence of this nature from the urethra may be doubted. If, however, we may be permitted to reason from analogy, by comparing the diseases of the

human urethra with that of other animals, its presence may be incontestibly proved by a reference to the corresponding organ of the ox. There is a preparation in the College of Surgeons, where the true polypus is growing from the urinary passage of this animal. It arises by a pedicle from the mucous membrane, having a broad and rounded extremity; being, in fact, an exact resemblance of the uterine polypus; and for which, if examined in a state of separation from the part to which it is attached, it might easily be mistaken.

Another species of excrescence occasionally exists in the urethra of a fungoid growth. This also is of rare occurrence, and the only instance I have seen of it is in a preparation in the museum of St. Bartholomew's. In this case the same kind of excrescence is attached to the mucous membrane of the bladder, which is not unfrequently affected by it. In one case, also, which has fallen under my observation, a kind of warty excrescence has been present in the urethra.

Having thus briefly enumerated the causes of permanent stricture, and those forms of disease to which the urethra is most liable, with the

exception of some of the morbid changes in consequence, and the result of the obstruction, which will be better discussed hereafter, I proceed to the most usual situations of permanent stricture—their symptoms, and their consequences.

CHAP. II.

Of the Situation of Stricture ;—its Symptoms, and the Morbid Changes in consequence.

STRICTURES have been known to be formed in every part of the urethra, excepting in that portion of it which is surrounded by the prostate gland. Their most usual situation, however, appears to be where the canal is narrowest. Thus they are most frequently met with at the entrance into the membranous portion, immediately behind the bulb, in the membranous portion itself, and about four inches and a half from the orifice. These, according to measurement, are the most confined parts of the urethra, and it is probable that they are more liable to become strictured on account of their being exposed to the stream of urine, from their protusion into the canal. In the same manner we find strictures of the œsophagus to occur where the funnel of the pharynx narrows into the gullet ; strictures of the cardia, where the passage is straightened by the muscular fibres of the diaphragm ; again, at the pylorus,

where the bag of the stomach contracts into the duodenum; and lastly, in the rectum, where the sigmoid flexure turns over the ridge of the sacrum. At these different points the canal receives the impulse of the contents as they pass, and if predisposed, are excited to inflammation, ending in thickening and stricture. In a similar manner, in the urethra, the more contracted parts receive the momentum of the stream of urine, and if predisposed, become inflamed, and when once inflamed, the same causes continue to keep up that state, and to aggravate the affected part. This, I am inclined to think, is the cause why strictures more frequently occur at particular points. But there are other situations, also, where it is not uncommon for strictures to exist; the orifice itself is often contracted, and the part three inches and a half distant from it. Mr. Hunter considered that the bulb itself was most liable to the attack: I am inclined, however, to agree with Mr. Macilwain, that the affection most commonly occurs immediately behind it; and this I am led to infer, both from experience, and also from a comparison of the specimens preserved in our museums.

As there are various alterations in the structure of the part during the formation of stricture, so are there various symptoms corresponding with these changes. In the first stage of stricture, the part is only affected by slight chronic inflammation; hence all that the patient feels is an irritation in the urethra, with the sense of a burning pain as the urine flows through that portion. This occasions him but small inconvenience, and he takes but little notice of it; but, as the disease advances, the stream of urine, from the diminished calibre of the canal, becomes lessened in size, its course forked, or in some manner misshapen. During this stage of the disease, the symptoms alter their character in a ratio with the state of the diseased part. If there be but little inflammation, and the stream of urine be only slightly diminished in volume, the patient is often unconscious of an obstruction in the passage; for the bladder being obliged to increase its action from the sudden stoppage of the urine, has gained a greater degree of muscular power, and thus the urine is impelled from it with greater force, which prevents him from observing the lessened stream. If, however, on the other hand, there should be much disposition to inflammation at the

strictured portion, the least variation from the usual mode of living, the drinking much wine or spirits, the sudden change of atmosphere, the taking more exercise than ordinary, the catching a cold, or the slightest derangement of health, will immediately give rise to new symptoms. Under these circumstances there may be excessive pain; there may be an extreme degree of spasm in the urethra, so that the urine may be at first prevented from passing, and then suddenly gush forwards; or there may be total retention. A bougie passed at this time will very probably be arrested by spasm before it arrives at the stricture; and when its point touches the inflamed and contracted part, the patient will immediately and involuntarily grasp the hand of the operator. The pain felt is extremely acute; and when the bougie is withdrawn, it is found charged with mucus, and very frequently blood follows its removal. Those who are afflicted with strictures are occasionally attacked by shooting pains in the perineum; they often are subject to nocturnal emissions; a constant discharge, like gleet, with an occasional attack resembling gonorrhœa, and a constant desire to make water. Sometimes they have a fluttering sensation at the strictured part: some-

times a cluster of vesicles, which have been called "herpes præputialis," followed by ulcers, will make their appearance upon the glans penis, without any apparent cause ; just as vesicles and ulcerations break out about the mouth, indicating an irritable and inflamed state of the mucous membrane of the alimentary canal ; and sometimes great irritation may subsist at the orifice of the urethra.

All these are common indications of stricture ; and, in each individual, a greater or less number of them may be present. But there are other symptoms which are dependent upon the contraction. The semen is often prevented from making its exit at the time of coition. This is extremely distressing, and arises in consequence of the urethra having the power of contraction at the time of its emission. During the performance of this function the whole canal is lessened in diameter ; and the strictured part not having entirely lost this power, becomes completely closed, and thus the semen is prevented from passing through it. When this is the case, the semen is thrown backwards towards the bladder, and makes its exit some time afterwards. At the period of coition, under these circumstances, an ex-

treme darting pain is felt, and it has been asserted that bleeding from the urethra takes place, in consequence of the rupture of some of the small vessels. A swelled testicle is often concomitant with stricture. The urethra and the testicles sympathize with one another; hence, when the former is inflamed, the latter often become inflamed also. This may be observed in gonorrhœa. If the inflammation increase in this disease, and the discharge ceases, hernia humeralis very frequently arises in consequence: so likewise, in stricture of the urethra, it is a very common circumstance that swelled testicle arises from the irritation produced in this canal, the one sympathizing with the other. A patient has frequent attacks of swelled testicle, being unable to assign any cause for it: he consults his surgeon, who treats him according to the usual methods; the swelling subsides for a time, but in a short period it returns again. At length, this having repeatedly occurred, a bougie is passed, and a stricture is commonly discovered to be present in the membranous portion. Such cases as these have frequently happened in my own practice; and whenever a patient is liable to these attacks, I usually suspect a stricture is the cause of it. Those, also, who are the

subjects of stricture, very frequently have attacks of rigor resembling ague. The patient is attacked by the cold, the hot, and the sweating stage, one succeeding the other, as in this complaint. It chiefly occurs when the urethra has been irritated from any particular cause: thus, if a bougie be passed, or the patient has committed any excess, it is succeeded by this affection.

When the stricture has become indurated, and the contraction very small, all the symptoms just related may be present, but they are usually more decided. In this stage of the disease the urine can only dribble away from the penis, or flow drop by drop. The patient, at this period of the complaint, suffers great pain, and is generally at least half an hour in voiding the contents of his bladder. He is obliged to sit upon the chamber-pot, to press upon the perineum with his fingers, to grasp the penis at its extremity, elongate it, or to employ some other manœuvre equally harassing. In some cases the urine flows from the patient involuntarily, and thus he is always wet and offensive to those around him; or he has a constant desire to make water. A poor man, whom I was attending some time back, and for whom I divided the

stricture with the armed catheter, assured me that he had not slept longer than two hours together for two years. He said, that hardly an hour, or even half an hour, elapsed without his feeling this inclination, and that he was obliged to rise immediately from his bed to relieve himself. His health had much declined, and he was reduced to that degree of emaciation, that he almost resembled the *Anatomie vivante*. His bodily powers had so greatly diminished that he was obliged to give up his employment: indeed, he was in such a state of mind that he would have hailed death with delight. This case was one particularly gratifying to me; for, on the first night after the division of the stricture, he slept four hours without intermission. From this time he continued to improve; and in the short space of a month he became so fat as not to be like the same man. This case is not singular. It may be observed, that there are others where equal relief was experienced from the method employed, related at the end of this treatise.

In the last stage of stricture, various other symptoms have arisen in consequence of the obstruction. It is probable that the patient has had one or more attacks of retention of

urine, or that the urethra has ulcerated immediately behind the stricture, and thus the urine has been extravasated into the surrounding cellular substance. In the former of these two, the patient suffers great pain, and he has constant desire to void his urine, without the power of accomplishing it. As the bladder fills, the pain becomes excruciating; till at length, unless the patient is relieved by the stricture yielding to the treatment adopted, or by puncturing the bladder, it mortifies, or ulcerates in some part of it, and bursts. In the latter case, when the urethra ulcerates behind the stricture, the urine being infiltrated into the surrounding cellular substance, a tumor is formed in the perineum, or in the neighbouring parts. This gradually increases in size; and, unless it breaks, or is opened, it causes the most appalling symptoms. The patient suffers extreme pain; a low fever, somewhat resembling typhus, is brought on; he becomes comatose, and in this state he dies. If, however, neither of these circumstances—retention of urine, and ulceration of the urethra—have occurred, the long continuance of the obstruction will materially affect the general health. The patient becomes emaciated, nervous, and feeble;—his spirits desert him, his intellect is

impaired, and his countenance puts on an anxious and ghastly appearance. He is affected by a paralytic tremor, he is seized with a drowsiness amounting almost to stupor, and is indifferent to all around. At length, being exhausted, he sinks, and falls a victim to the disease.

The morbid changes which the urinary organs undergo from the obstruction in the canal of the urethra, are numerous. First, that part of the urethra immediately behind the stricture is dilated to a greater or less extent, according to the length of time the stricture has been present; secondly, the urethra is generally more or less inflamed between the stricture and the bladder; it ulcerates, and the urine makes its escape; thirdly, the bladder becomes thickened, the prostate gland diseased, and the kidneys and ureters participate in the mischief. The dilatation of the urethra arises in consequence of the flow of urine being arrested in its progress; and thus, from the sudden stoppage, the part immediately behind becomes distended. The urethra then inflames and ulcerates, and the urine is infiltrated into some of the neighbouring parts; and thus urinary

abscesses and fistulous passages are formed. The former of these usually contain an extremely fœtid, urinous, sloughy matter; and through the latter the water makes its exit; and they usually lead immediately from the urethra to the perineum; but they sometimes terminate on the side of the rectum, anterior to the scrotum, at the scrotum itself; and in some few instances I have known a fistulous passage to extend from the urinary passage to the back part of the thigh. By these fistulous passages the urine, at the time of micturition, makes its escape, instead of through its natural channel; and when they have continued for a long time, their sides become hardened, and in some instances they are lined by a kind of membrane. Specimens of this description are to be seen in the College of Surgeons. In one case there are two fistulous passages, which resemble regular mucous canals, being lined by a membrane analogous to the mucous tissue. It is a curious fact, that if a false passage be made, leading from one part of the urethra to another, and the urine passes through this new channel, it is also found to be lined by a membrane, or what looks like a membrane, and it has the appearance of a natural-formed canal. This I have

seen in one or two instances; and my friend Mr. Lawrence mentioned to me a case where he found, in the urethra of a gentleman who had been in the habit of having bougies passed, a new canal formed, of between two and three inches in length, commencing anterior to the bulb, running close along the side of the natural canal, and terminating in the prostatic portion. This canal had a smooth mucous surface, very similar to the urethra itself. In a case also which occurred to myself, the urethra, in that portion of it which passes through the penis, was impervious; but immediately under it there was a newly-formed passage, which, likewise, was lined by a membrane of the same description.

The morbid changes that are observed in the bladder, when a patient dies of stricture, are, that the muscular coat is extremely thickened, and that the mucous membrane of that organ is often considerably ulcerated. The pillars of the muscular fasciculi are frequently so greatly enlarged, that the internal surface of the bladder has a columnar appearance, somewhat similar to the ventricles of the heart; and the mucous membrane is sometimes protruded between them, by which pouches are

formed. The ureters are also much thickened and distended; and, in some cases, they have been enlarged to that degree that they have resembled a piece of small intestine. The pelvis of the kidney is likewise increased in size, being sometimes dilated to a great extent. The prostate gland is frequently enlarged; abscesses are occasionally found in it, with fistulous passages leading from them to the perineum or parts around, and its natural ducts are often considerably dilated.

CHAP. III.

Treatment of Spasmodic and Inflammatory Stricture.

DURING the formation of a stricture in the urethra, the state of the diseased part varies, according to the progress it has made towards that change of structure which renders it permanent: as, in the first stage, only an irritability exists, attended, when there is any exciting cause, by spasm; in the second, inflammation and spasm; in the third, an alteration of structure, accompanied with, or without, inflammation and spasm; and in the last, the part has become nearly, or quite impermeable, and of a cartilaginous texture, so the treatment of stricture will be regulated by the state of the diseased part. If there be little or much inflammation, or the structure of the part has become altered, means adapted to each of these several states ought to be employed. This view of the question, however, appears to have been too generally lost sight of; and the treatment, as regards the cause of the disease, too much neglected.

I shall begin to speak of the treatment of stricture in its first stages ; that is, while it may be deemed spasmodic and inflammatory ; and afterwards I shall devote two or three chapters to those which have undergone a change of structure.

From what has been considered as the predisposing and local causes of spasmodic stricture, and from its existing only during the continuance of those causes, the cure will obviously depend upon, and be accomplished by, their removal. If the spasmodic stricture depend upon the extreme irritability of the urethra, occasioned by a morbid irritability of the stomach, and produced by some irritating cause present in that organ, it will be our care to remove such offending matter, or neutralize its effects ; or we may directly allay the tendency to spasm by opium, camphor, and other anti-spasmodics ; or by soothing the affected part with fomentations, &c. We must, however, bear in mind in this case that we are only overcoming the tendency to spasm for a time, and not removing the cause. The cure must be effected by diminishing the general irritability. If it arise from a local cause, as the urine being of too stimulating a quality,

the tendency to stricture will be diminished by diluting largely with mucilaginous drinks. The same end is also attained by neutralizing the urinary salts with alkalies. Attention, likewise, should be paid to the food eaten, taking care that it is not of a stimulating or irritating nature; and such medicines should be administered as will assist the digestive powers, and regulate the excretions. Whenever the voiding of the urine is attended by much pain, together with spasm, and a diminution of the size of the stream of urine at the same time, we may be assured that one or other part of the canal is more or less inflamed. Under these circumstances it is advisable that leeches be applied to the perineum, that the bowels be freely evacuated, and that the patient be placed in the warm bath, or desired, according as the symptoms may require, constantly to foment the perineum. As long as these symptoms continue, the above remedies should be repeated at least twice in the week, and if they are urgent, even oftener. When the pain and irritation of the urethra have subsided, then, and not till then, a bougie may be passed to ascertain the state of the canal. If the bougie passes readily through the contraction, without spasm or

pain, we may be certain that the inflammation is nearly subdued: if, however, on the contrary, it is entirely resisted by spasm, or its introduction is attended by great pain, but little abatement of it can have taken place. In the latter case, leeches must be again applied to the perineum, the warm bath and fomentations continued, and the bowels kept freely open. In the former, it may be as well to apply leeches also, after the introduction of the bougie; but this must be regulated by the symptoms during its passage.

In all difficult cases of stricture it is advisable to prepare for passing the bougie by the application of leeches, and fomenting the perineum immediately before its introduction. By pursuing this method, the vessels of the part are emptied, the inflammation reduced, and the urethra is rendered less irritable. This plan of treatment I have frequently adopted; and I have succeeded in many cases where I am convinced I otherwise could not have passed it. When, also, the bougie has been resisted by spasm, or that there has been much pain and irritation during its passage, I have directed that leeches be applied immediately afterwards, with a view of preventing the

inflammation which might otherwise have arisen.

Opiates, both administered internally, and used as a suppository, are very beneficial in allaying pain and irritation of the urethra. The best method of employing them internally is, by keeping the patient under their influence; that is, by giving small and repeated doses at stated intervals. The extract conii, and the extract hyosciami, appear to answer this purpose better than any narcotic, inasmuch as they do not produce the same feverish disturbance in the system as is occasioned by opium, nor give rise to the same disposition to constipation. I generally combine them with the dried subcarbonate of soda, beginning with five-grain doses every six hours, and increasing the dose according to the effect produced. When a suppository is necessary, the pil. sapon. c. opio is perhaps as good as any that can be employed. From twenty to forty grains, or even more of this, as the symptoms require, may be placed in the rectum, when extreme pain and irritation are felt, or every night at bed-time. An enema, also, containing tinct. opii in the same proportion, is another mode of employing it; and this, in

severe cases, may be better than the other, as it acts also as a fomentation to that part of the urethra which is in contact with the rectum, and empties the contents of the bowel at the same time.

The diet is another very important consideration in the treatment of inflammatory stricture. This should be of the mildest description; for any thing taken into the stomach of an irritating nature would naturally affect the secretion of the kidney, and also produce a disposition to inflammation generally. The urethra, therefore, being already diseased and inflamed, both these causes would tend to increase it. This is exemplified by a patient with stricture drinking spirits or wine too plentifully;—the part immediately becomes inflamed, and sometimes to that degree that retention of urine is the consequence. The diet should be regulated by the state of the stricture. If the patient is suffering great pain, irritation, or difficulty in voiding his urine, it ought to consist of vegetables, puddings, maccaroni, &c.: if, however, these symptoms are absent, he may take a proper proportion of meat, with vegetables, never overloading the stomach, and always avoiding spirits and fermented liquors. Added to these

precautions in diet, the bowels should be regulated by mild aperients, and an alterative pill (pil. hyd. sub. c. gr. v.) taken on the alternate nights. In all cases of stricture, also, in whatever stage of the disease, a tepid fomentation applied to the perineum will be found extremely soothing, and beneficial in allaying the pain and irritation of the canal; and it ought always to be made use of three or four times in the day.

Nothing, reasoning *à priori*, can appear more injudicious than passing a bougie through an inflamed and irritable canal. It would incline one to believe, instead of its producing any good effect, that it would increase the inflammation and irritability of the urethra. This, however, is not the case, at least when the inflammation is not very severe: on the contrary, when there is not a *high* degree of it, it is beneficial. First, it enlarges the part; and thus, there being less obstruction, the urine passing through it does not cause so much irritation; and secondly, the bougie, touching the surface of the tender membrane, accustoms the part to the stimulus of a foreign body, and thus renders it less irritable. It is not at all an uncommon occurrence, that, on the first in-

troduction of a bougie, the patient feels as if a hot iron were passing through the urethra ; and he expresses the sensation exactly in such terms : on the second introduction he has less sensibility in the canal, on the third still less, and at length none at all. It is remarkable, and hardly to be accounted for, but the very touching the strictured portion, without passing the bougie through it, will sometimes give relief. This I have observed in many cases, and in some few instances where retention of urine has existed. A patient who was under my care during the period I was house-surgeon at St. Bartholomew's, used to be frequently attacked with retention of urine from stricture ; the moment the catheter touched the contracted portion the spasm ceased, and the urine began to flow. In a case which Sir C. Bell mentions, there was a false passage on the side of the stricture, and even passing a bougie into this false passage relieved the patient.

A question may be asked, how often ought a bougie to be passed ? In answering this, some would say, once in the week, others twice, and others, on the alternate days. The passage of the bougie should, however, be regulated by the state of the diseased part.

If there is a *high* degree of inflammation, the bougie ought not to be passed at all until this is reduced. If it is not very violent, twice in the week will be sufficient; and if it is but slight, it may be done thrice to advantage; but it never should be introduced oftener. At first it would be better to employ the common wax or gum-elastic bougie, as neither of these is likely to injure the urethra. Afterwards, however, I prefer the metallic bougie, or rather the steel dilator, having observed that the cure of stricture by these instruments is more permanent: they resist spasm, and you have more command over them; at the same time, having a polished surface, they pass more easily; and if a catheter be used, you know when you have entered the bladder, from the flow of urine through it.

Retention of urine is a very common consequence of stricture; and, in this case, there are different opinions as to the treatment that ought to be pursued. Some advise that the catheter be not passed until the inflammation is reduced, while others recommend that its introduction be attempted. In very urgent cases, and where the patient is suffering extreme pain from the distention of the bladder, I am in-

clined to favour the latter. It is some time before the inflammation and spasm of the stricture can be reduced; and during this period the patient is suffering increased pain, and the bladder is becoming larger and larger. If, under such circumstances, a catheter could be by chance (for in such a case it can be considered as no other) passed, the advantages gained would be so great that it would more than counterbalance the increased irritation that might ensue from its introduction. The means for the reduction of the inflammation might at the same time be pursued, so that no time would be lost, and the catheter also be used with so little force, that trifling injury could be done to the inflamed part. In more moderate attacks of retention of urine, I should prefer, however, that the inflammation be, if possible, reduced before there is any attempt made to permeate the stricture. It is almost unnecessary to enumerate the methods by which this is accomplished: I will, however, briefly state them.

The patient should be bled to syncope; he should be placed in the warm bath, leeches should be applied to the perineum, a powerful opiate enema injected into the rectum, tar-

tarized antimony given so as to produce nausea; and he should constantly foment the perineum. These means should be repeated, if necessary; and if they fail, an attempt should be made to introduce the catheter. When this instrument cannot be passed, the distressing alternative of puncturing the bladder must be had recourse to, or the lancetted stillette used, as will presently be described. I have observed, in many cases of retention of urine, that the opiate injection administered immediately after the patient is taken out of the bath, has been attended with good effect. It is probable that the warm fluid being immediately in contact with the posterior surface of the bladder and that part of the urethra adjoining the rectum, soothes these parts, as well as the muscles around the canal, diminishing the tendency to spasm, and completing the relaxing effect of the bath; while, at the same time, the opiate acts as an anti-spasmodic. The muriated tincture of iron, given in doses of twenty to thirty drops every ten minutes or quarter of an hour, will, in some cases, relieve the spasm, and cause the urine to flow.

When there is a difficulty in passing an in-

strument, a small gum elastic and highly-varnished catheter, with the curved wire in it, may be tried. As this approaches the stricture, the wire should be partially withdrawn. By doing this, its point will be rendered pliable, and it can be kept against the upper surface of the urethra, where generally the stricture affords less resistance. The catheter without the wire will occasionally pass better than with it, and sometimes a common small soft bougie will permeate the stricture, when it cannot be effected by any other instrument. Each may in its turn be tried, taking care, however, at the same time, not to injure the urethra, by employing them with too great a force. If the point of the catheter or bougie be passed along the lower surface of this canal, it will not enter the stricture, and the reason of this is, as it appears to me, that the urethra having nothing to support it beneath, yields to the pressure of the bougie, and thus forms a pouch immediately anterior to the stricture in which its point lodges. This seems to explain why success attends the introduction of a bougie or catheter, when its point is made to press upon the upper, and not, as is imagined by some, that the stricture is more perceptible on the lower surface of the passage. In some

cases a catgut bougie will pass when no other can be made to permeate the stricture, and it is probable that this is owing to its peculiar pliability, and to the resistance it affords at the same time. As the catgut bougie cannot be made to resemble the curve of the urethra without its losing its resistile power, it should be slightly bent at its point, so that it may press against the upper surface of the canal.

Before passing the bougie, it should be bent as nearly as possible to the curve of the urethra; and the penis should be elongated, to prevent folds, in which its point may lodge, being formed in the canal. On its first introduction, the bougie should be nearly as large as the calibre of the urethra, as small ones are apt to be caught in the lacunæ as they pass, and thus we are prevented from ascertaining the exact state of the stricture. Its introduction, also, should be effected with the greatest care and gentleness; and if when it arrives at the stricture it is resisted by spasm, a steady and continued pressure will sometimes overcome it, but force never should be employed. When the stricture will only admit through it a very slender bougie, it is a good plan to pass a silver tube down to it first, and then to in-

roduce the bougie through this canula. By pursuing this method the bougie does not catch in the lacunæ, and it is not softened from the warmth and moisture of the urethra.

When a stricture is in that tranquil state that it will admit through it a bougie or catheter without much pain and irritation, the size of the dilator should be increased every or every other time it is introduced, until it arrives at No. 12, 13, or 14, according to the natural diameter of the urethra, which varies in different individuals. It should be passed, as before stated, once or twice in the week; and when arrived to the *maximum* size, its introduction should be continued for a few weeks, to ensure the permanency of the cure: indeed, from the liability of the return of stricture, I am inclined to recommend that it be passed once in three months, for a year or two afterwards. This would prevent the recurrence of the disease, and, in time, would become habitual.

The first introduction of a bougie produces, in different individuals, various effects. Sometimes the patient is immediately seized with a fainting fit, sometimes with sickness, at other

times an extreme cutting pain is felt in the urethra. In some cases, also, the passing of the bougie almost always causes so much irritation, that when the patient is predisposed to it, an attack of rigor is the result. When we have reason to suppose that this affection is likely to occur, we should employ every means in our power to prevent it. It arises from irritation of the urethra, and therefore our chief endeavour should be to remove the cause of this irritation. This I have found to be best effected by the application of leeches to the perineum, immediately after the introduction of the bougie, by constantly fomenting the part, and by employing an opiate suppository or enema. An opiate draught may also be given with good effect. This plan of treatment I have adopted in several cases; and in one gentleman, who had given up all hopes of his stricture being cured, on account of his always being thus attacked after the passing of a bougie, these remedies completely prevented it, and he is now recovered.

CHAP. IV.

Of the Treatment of Permanent Stricture.

HAVING thus briefly treated of the cure of the simplest forms of stricture, it remains for me to speak of the last and more complicated kind—the Permanent. We have here to contend with a modification of structure of the urethra ; with a part irregularly thickened, and so indurated as to resemble the structure of cartilage, and with a narrow canal, contracted to that degree, and so extensively, that it is either quite impermeable, or it will only admit through it the smallest-sized bougie. To effect a cure of these states of the urethra we have to enlarge the contracted passage ; to procure the absorption or destruction of the surrounding thickened tissue ; and to restore the parts to their healthy condition.

The different plans which have been adopted to permeate this description of stricture, and to restore the urethra to its healthy condition,

are four in number:—First, it has been attempted to make the part ulcerate by the continued pressure of a bougie upon it. Secondly, some surgeons have endeavoured to force through the contraction with a conical sound. Thirdly, caustics have been applied to the diseased part, with the view of destroying it. And, fourthly, the part has been divided from the perineum. The two former of these plans of treatment—the endeavouring to make the part ulcerate, and the forcing through the contraction with a conical sound—are now, from the danger and uncertainty with which they are attended, totally relinquished; and the two latter—the applying the caustic, and the division of the stricture from the perineum—are the only means which are at present practised. These, however, are also attended with great risk. The destruction of a permanent stricture by the application of caustic is an extremely tedious and painful process, uncertain as to its final result; and, at the same time, as will presently be shewn, symptoms frequently arise that endanger the life of the patient. The division of the stricture from the perineum is a very difficult and painful operation, being nearly, if not quite, as severe as that for the stone; besides which, it is often unsuccessful,

and terminates fatally ; and sometimes, even when it has been successful, the wound made in the perineum will not heal, and thus the urine constantly flows through a fistulous and unnatural passage : it is also so little susceptible of being reduced to fixed rules, that it can hardly become a measure of general adoption.

With regard to the treatment of stricture by caustic, we find from Sir Everard Home, and others who have written on the subject, that it is often attended by extremely dangerous consequences. These consequences are, great pain, retention of urine, profuse hæmorrhage, false passages, violent inflammation, rigors, fever, stranguary, and swellings in the perineum. That these are the symptoms which frequently occur from strictures being treated after this method is acknowledged by Sir E. Home himself, and all those who have employed it. Sir Everard expressly states*, “ that the pain that is brought on by caustic lasts for some time after it is withdrawn ;” that “ it is sometimes not felt at the time, but that it comes on a few minutes after the caustic is removed, is very severe, and lasts for hours ;” and that “ the sur-

* Home on Stricture, Vol. I. sect. 7.

geon who makes the application is made conscious of it by the smaller arteries of the part beating with unusual violence ; which is very distinctly felt by the finger and thumb which grasp the penis." Sir Everard goes on to state, that another effect of the application of the lunar caustic " is, in some particular cases, very profuse hæmorrhage ;" and he relates six cases of this description, in all of which it was so considerable that the patients were extremely lowered by the loss of blood ; and some of them bled so profusely that the quantity lost amounted to two or three pints. Retention of urine is often enumerated, by the same author, as following the use of caustic ; and, in four cases where it occurred from its application, the bladder was punctured, in two instances of which the patients died. Lastly, not to mention the instances where constitutional symptoms, rigor, &c. arose, the formation of false passages has been admitted, by all who have written on the subject, to be a consequence to which the use of caustic is extremely liable ; and the experience of every surgeon will supply him with many examples of their occurrence being the result of this treatment. These are the principal objections to the application of caustic ; and, in addition

to them, the number of times necessary to repeat its application is another of no small importance. It may be observed, that it is not an uncommon circumstance that a stricture is touched with it six, eight, ten, twenty, thirty, sixty, one hundred, and even more times; and at each application one or other of the above alarming symptoms may occur. The time also that it takes to effect a cure when it does succeed, is usually months; in many cases it has been even years, and after all it often happens that it is attended by a failure.

Another description of caustic, the potassa fusa, which, if it be applied immediately to the flesh, before it liquifies, is more powerful than lunar caustic, has been recommended by Mr. Whately. He supposed the potassa fusa destroyed the diseased portion much more quickly, and effected a more permanent cure, than lunar caustic. These advantages, supposing them to exist, are more than counterbalanced by the difficulty of transmitting the potassa fusa down to the stricture without liquifaction, and the possibility of confining its action to any determined point. In other respects it is liable to the same objections as the lunar caustic. It requires repeated applications, gives great

pain ; and the same symptoms, hæmorrhage, retention of urine, &c. may arise from its employment.

Having thus pointed out the difficulty and danger of dividing strictures from the perineum, and the uncertainty and alarming consequences attendant upon the treatment by caustic, I have now to propose another method of treating this disease in its more aggravated and obstinate form.

IT IS THE DIVISION OF THE DISEASED PART WITHIN THE CANAL OF THE URETHRA.

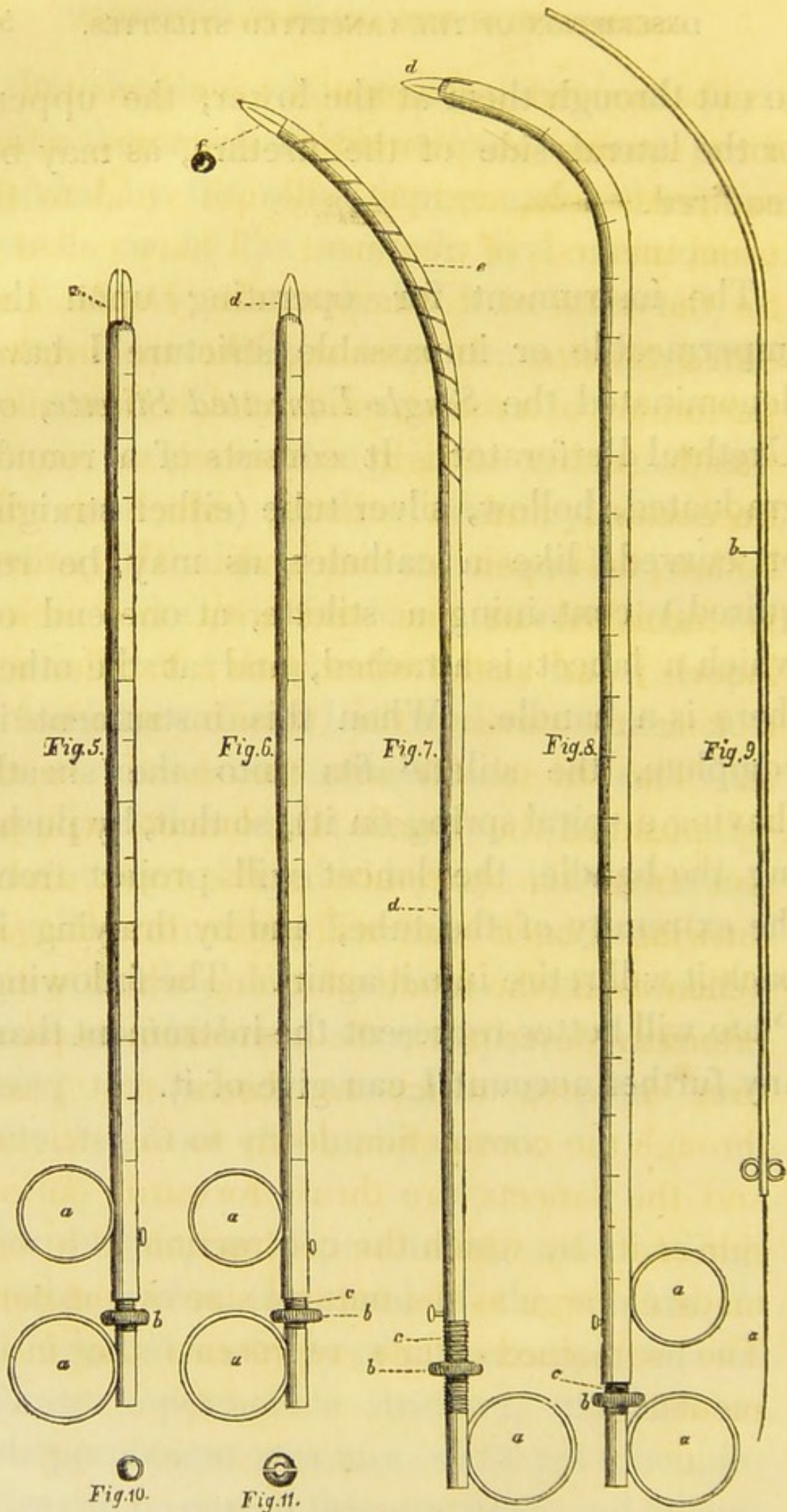
The advantages of this mode of treatment are, that it effects with certainty, and in a short time, what the caustic is intended to accomplish by repeated and tedious applications ; and it is free from the difficulties of the operation for the incision of the stricture (an operation little less painful than that for lithotomy) through the perineum ; thereby saving the patient the inconvenience and misery of a new channel, leaving but little for nature to repair, and, at the same time, allowing the urine to flow through its natural passage.

The division also of the strictured part within the canal of the urethra has not been attended by the same danger and evil consequences as by the methods just mentioned. In all the cases on which I have operated, it has never been followed by hæmorrhage, false passages, violent inflammation, fever, retention of urine, or swellings in the perineum, not unfrequently the result of the application of caustic. Usually no inconvenience has arisen from it. The patients have suffered little or no pain from the operation, only a few drops of blood have been lost, and sometimes not more than has been sufficient to soil the lancet has followed the incision. They usually have not been obliged to lay up, the hardened and callous structure forming the stricture has become quickly absorbed, and, in a few weeks, a disease, which has been of years' duration, causing the patients the greatest pain and misery, has been effectually cured.

For the purpose of perforating and dividing strictures within the canal of the urethra, I have invented a variety of instruments: one to perforate impermeable stricture, another to divide permanent stricture, while yet a bougie or wire can be passed through them; and others

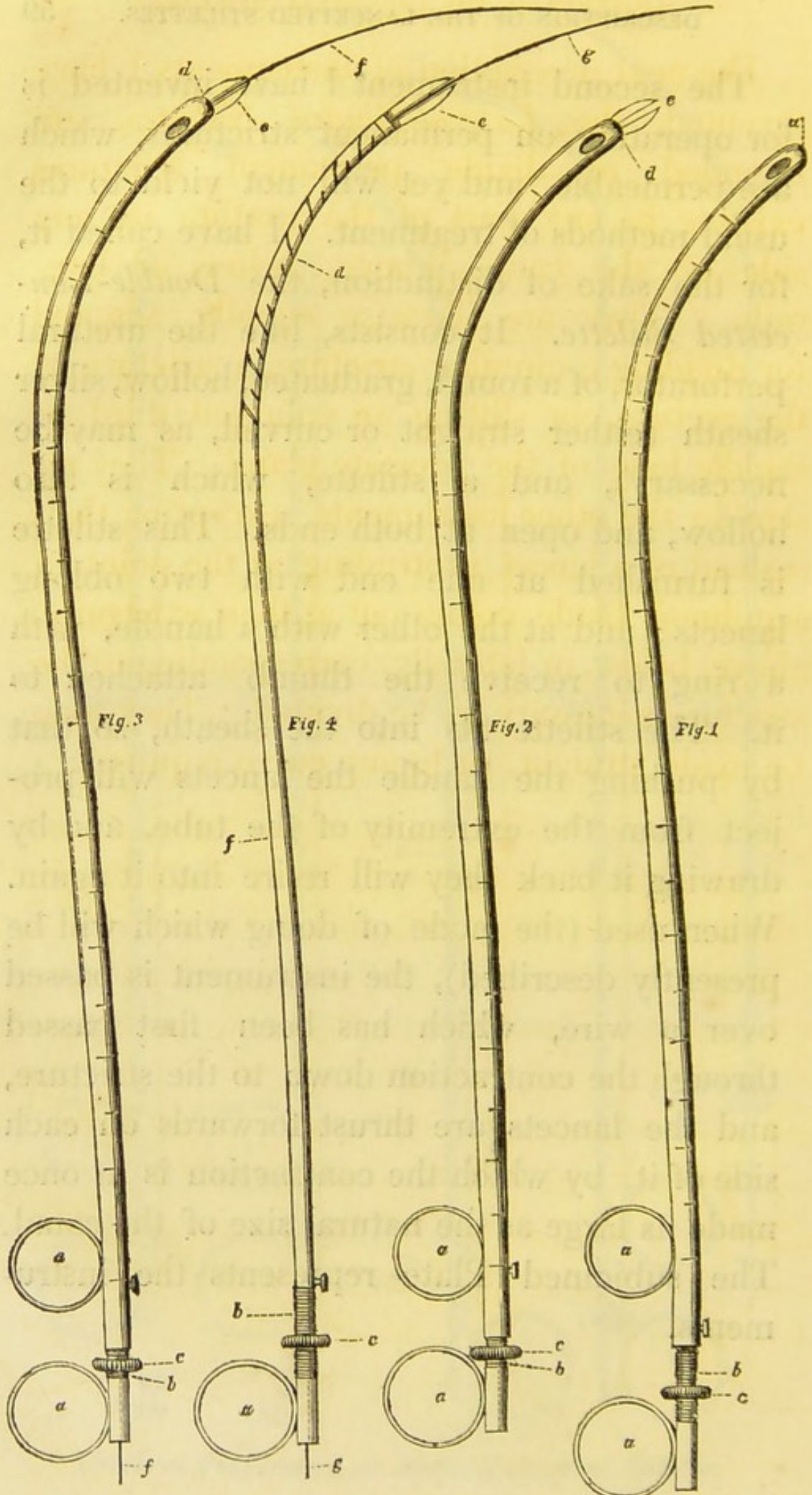
to cut through them at the lower, the upper, or the lateral side of the urethra, as may be required.

The instrument for operating upon the impermeable or impassable stricture I have denominated the *Single-Lancetted Stilette*, or Urethral Perforator. It consists of a round, graduated, hollow, silver tube (either straight or curved, like a catheter, as may be required,) containing a stilette, at one end of which a lancet is attached, and at the other there is a handle. When this instrument is complete, the stilette fits into the sheath (having a spiral spring on it), so that, by pushing the handle, the lancet will project from the extremity of the tube, and by drawing it back it will retire into it again. The following Plate will better represent the instrument than any further account I can give of it.



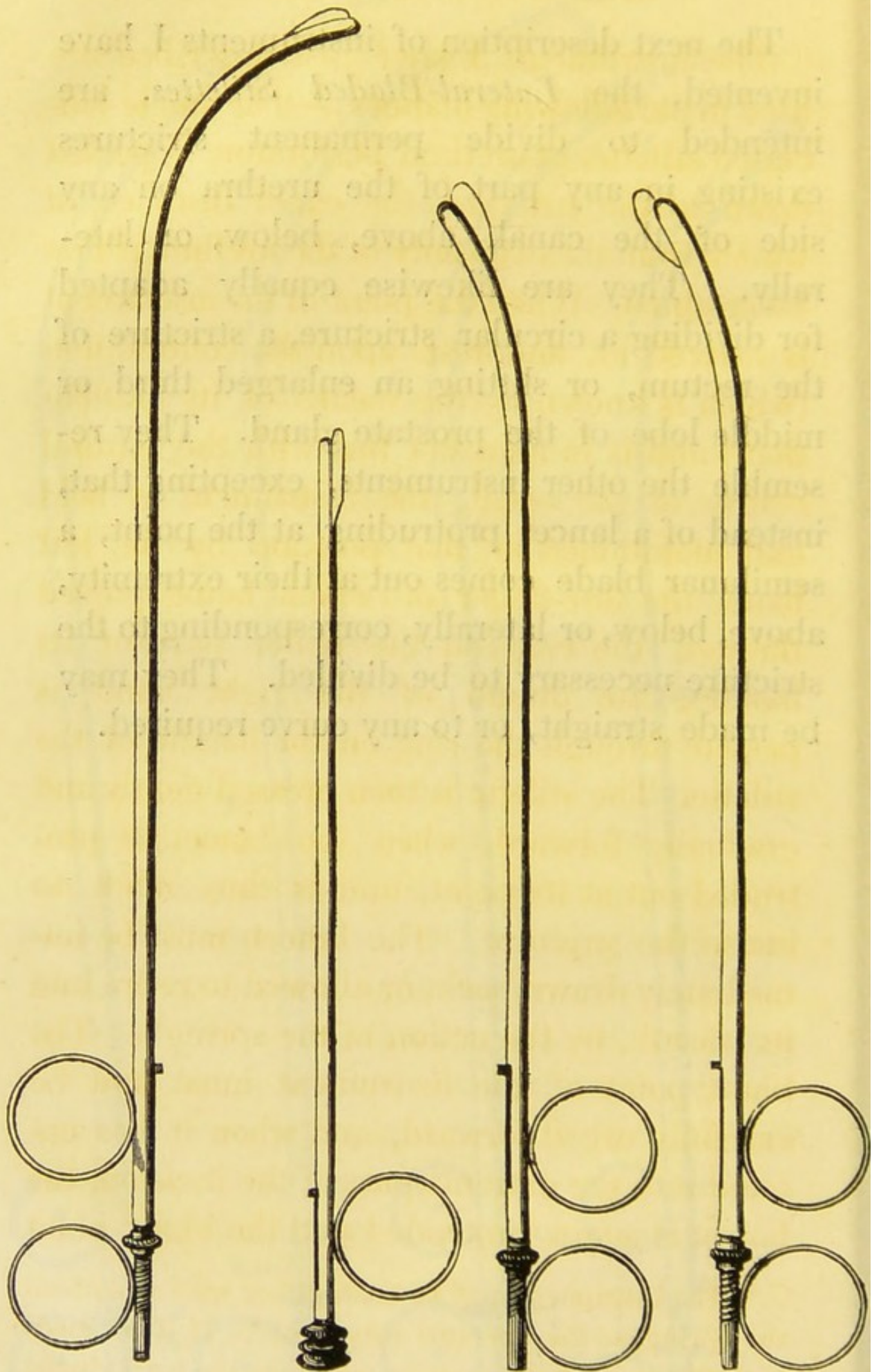
Urethral Perforator, or Single-Lancetted Stilette.

The second instrument I have invented is for operating on permanent strictures, which are permeable, and yet will not yield to the usual methods of treatment. I have called it, for the sake of distinction, the *Double-Lancetted Stilette*. It consists, like the urethral perforator, of a round, graduated, hollow, silver sheath (either straight or curved, as may be necessary), and a stilette, which is also hollow, and open at both ends. This stilette is furnished at one end with two oblong lancets; and at the other with a handle, with a ring to receive the thumb attached to it. The stilette fits into the sheath, so that by pushing the handle the lancets will project from the extremity of the tube, and by drawing it back they will retire into it again. When used (the mode of doing which will be presently described), the instrument is passed over a wire, which has been first passed through the contraction down to the stricture, and the lancets are thrust forwards on each side of it, by which the contraction is at once made as large as the natural size of the canal. The subjoined Plate represents the instruments.



Double-Lancetted Stilettes.

The next description of instruments I have invented, the *Lateral-Bladed Stilettes*, are intended to divide permanent strictures existing in any part of the urethra on any side of the canal, above, below, or laterally. They are likewise equally adapted for dividing a circular stricture, a stricture of the rectum, or slitting an enlarged third or middle lobe of the prostate gland. They resemble the other instruments, excepting that, instead of a lancet protruding at the point, a semilunar blade comes out at their extremity, above, below, or laterally, corresponding to the stricture necessary to be divided. They may be made straight, or to any curve required.



Lateral-Bladed Stilettes.

The instruments I have just described are used in the following manner :—The single-lan-cetted stilette, or urethral perforator, is passed down to the stricture, the exact distance of which, from the extremity of the urethra, is first ascertained. When the point of the instrument is arrived at, and rests upon the contraction, (which is known by the means of its graduation,) and is in an exact line with the natural course of the canal, the instrument is held and maintained in that position by the left hand, the fore-finger of which being passed through the ring on the under part of its handle, the thumb of the right hand is passed through the ring on the handle of the stilette. The stilette is then pressed gently and gradually forward, when the lancet is protruded out at its point, and is thus made to incise the stricture. The lancet must be immediately drawn back, or allowed to retire into its sheath, by the action of the spring*. The blunt point of the instrument must now be carefully urged forward, and when it has entered into the extreme part of the incision, the lancet is again protruded and the blunt point

* The instrument may be made either with or without the spring, as the operator may please. If it be made with the spring its own action will draw the lancet back; if without, the operator must himself draw it back.

used, and so on, first using the lancet and then the blunt point, until the stricture is perforated.

The second instrument, the Double-Lancetted Stilette, is used in the same manner as the preceding, excepting that it is passed over a wire which serves as a guide, and which has previously been introduced through the stricture into the bladder. The mode of introducing the wire, which is double the length of the instrument, and is blunted like a probe at one end, so that it may not injure the bladder, is as follows:—The smallest sized catheter, open at both ends, is made to contain the wire. This instrument is passed through the stricture, and when it has entered the bladder, the wire is pushed, which is best done by means of a particular kind of forceps* adapted for the purpose, and the catheter withdrawn. By this manipulation the wire is left in the urethra; the double-lancetted stilette is then passed over the wire, until its point rests against the stricture (which is known by means of its graduation), and being held securely in such position, the handle of the stilette is pressed forward. As soon as any impression is made the lancets are

* To be purchased at Ferguson's, Surgeons' Instrument-Maker, Giltspur-Street.

drawn back, and the blunt point of the instrument urged forward. If necessary, the lancets must again be thrust out, and the blunt point of the instrument urged on, until in this way the stricture is gradually cut through, and the canal is made as large at that part as its natural size.

The third instrument, the *Lateral-bladed Stilette*, is passed just beyond the stricture; the blade is then thrust out at the point on the lateral surface, (as represented in the Plate), and drawn back through the stricture, or what it is intended to divide, and the part is at once severed; the blade, of course, is immediately allowed to retire into its sheath, and the extent of the incision is regulated by a screw at the handle. This instrument is employed precisely in the same manner, both for the slitting along an enlarged middle lobe of the prostate gland, and a stricture of the rectum.

Having given a description of the mechanism of the lancetted stilettes, and an account of the manner in which they are to be used, I shall now speak of the after treatment, when a stricture has been perforated or divided.

When an impermeable stricture has been perforated by the single-lancetted stilette at one operation, I have usually passed an elastic gum catheter immediately afterwards, and have left it in the bladder, increasing its size every second or third day, until the largest size the urethra will admit of can be passed. I have then withdrawn the catheter altogether, and have passed a steel dilator every other day, or twice in the week, until the indurated substance, which formed the stricture, has been absorbed.

It often happens, however, that the contraction in the urethra is one, two, three, or more inches long, being irregularly thickened and tortuous. When this has happened, I have found it necessary to cut through the part gradually, and by more operations than one. In some cases the stricture has occupied so great a length of the canal, and has been so extremely indurated, resembling cartilage more than any other structure, that I have been obliged to employ the instrument at several different times. When such has been the case, I have found, after having made an incision into the stricture, that by keeping it open by a bougie the hardened structure has become

absorbed as far as the puncture has gone, and then, as fast as the contraction has been opened, the surrounding diseased structure has disappeared, and a healthy membrane, analogous to that of the urethra, has formed. Hence, when the whole has been permeated, the stricture, whatever length it may have been, has been nearly cured, and it has only required a few introductions of the steel dilator to restore the canal to its natural size and structure. During the process of cutting, the pain has been very trifling, and I have usually allowed the patients to walk about and follow their common avocations.

The after treatment, when the double stilette has been used, is much the same as when the preceding instrument has been employed. In some cases I have found it necessary to leave an elastic gum catheter in the bladder; but in most this treatment has not been required.

In some of the cases in which the instrument has been employed, the division of the stricture has been followed by more or less inflammation, but seldom amounting to a great extent. When there is reason to suppose, from the previous symptoms, that such an occur-

rence may take place, it should be guarded against by the application of leeches to the perineum, immediately after the operation, and by a strict adherence to the antiphlogistic regimen. If the presence of the catheter that is left in the urethra cause considerable pain, it must be withdrawn; but in this case it is of material consequence to pass a bougie daily, lest the divided parts re-unite.

It may be objected to the use of these instruments that there is a liability of making a false passage. This is prevented, in the permeable stricture, by the wire acting as a director, and limiting the incisions to the size of the natural canal, so that it is impossible to deviate from the course of the urethra. With regard to the second case, or when the stricture is not permeable, it must be admitted that, in unskilful hands, or by violent means, a false passage may be formed; if, however, the operator is well acquainted with the anatomy of the urethra, and directs the point of the instrument in the natural course of the canal, such an occurrence is much less likely to happen than when a blunt metallic catheter or bougie is forcibly or improperly employed; for the lancet which comes out at the point must ne-

cessarily incise the part immediately before it. Hence, if the point of the stilette be in a direct line with the natural curve of the urethra, it is almost impossible the lancet can cut out of the passage. As a proof of this, in the numerous cases of impermeable stricture that I myself have operated upon, I have never yet made a false passage. I very much question, however, if the same number of cases had been treated by caustic, or any other method, whether they would have been attended by the same success. On the whole, therefore, it may be safely inferred, that although it is possible that a false passage may be made by the single-lancetted stilette, yet, with common care, it may be avoided. Other objections, no doubt, may be made by those who have not had any experience of this treatment, or who from early prejudice may naturally think there is great danger in this practice. They may imagine that great pain, hæmorrhage, extravasation of urine, abscess, and other evil consequences, may ensue. It gratifies me, however, to state, that no one of these has occurred in my own practice. I have now had considerable experience of the treatment, and I have never myself seen any mischief, excepting very trivial inflammation, which has been easily

subdued by leeches, arise from it. There has been but little pain, no hæmorrhage, no false passage made, no extravasation of urine, no abscess in the perineum, and no other evil consequence whatever, follow perforation or division of the stricture.

By dividing a permanent stricture we are only enlarging a contracted canal to its natural size, and thus relieving the system of the irritation which must necessarily arise from such disease. We are, in fact, reducing what was before performed by a complicated method, to a simple surgical operation; and, by making one slight incision, we are accomplishing at once what could formerly be only effected by a very slow, or by a very unsafe and painful process; setting aside, at the same time, the uncertainty and difficulties attending them.

I have had only one opportunity of examining the part after the stricture was divided, and the preparation of the urethra of this patient is now in the Museum of the Royal College of Surgeons, in Lincoln's-Inn Fields. His stricture, which was one of twenty-three years' standing, and more than an inch in

extent, was situated at the bulb, and in the membranous portion. The operation was completely successful, and he made water naturally. He lived two years without any symptoms of stricture, and died at seventy-six, from diseased lungs and the infirmities of old age. On examination, the calibre of the canal was found natural throughout; there was no hardness around the part that had been formerly contracted, and the membrane lining it was continuous with the rest of the urethra; the only difference that could be perceived was a little redness and roughness, and the incisions made by the instrument could be traced, though not very distinctly. In the numerous cases, also, where I have operated for stricture, I have found that on passing a catheter afterwards, at different periods of time, a year and upwards, no hardness at the strictured part could be perceived, and it could be passed with ease, and generally speaking it would have been difficult to have told where the stricture had been present.

In cases where strictures have existed for ten or twenty years, and upwards, on which I have operated, it appears that the hardened structure by which the contraction was formed

became completely absorbed; and that the urethra, at the part, was restored apparently to its healthy condition, and the disposition to contraction did not return. To account exactly for the disappearance of hardened structure which formed the stricture would be difficult: it is probable, however, that the division of the thickened and indurated substance produces ulceration of the diseased structure, at least where the incision of the part takes place, and that in this manner it is destroyed. This I am led to infer, from having observed that, in some cases, if the stricture be only punctured, without being completely divided, that on the following day a catheter can be passed. This circumstance has happened in several cases where I have operated for impermeable stricture. In these there was a slight discharge of pus from the urethra before a catheter was passed, which seems to prove this fact. This may not, however, be the only reason why the thickening and induration disappear from its division: it may be accounted for, perhaps, on another, and, I cannot help thinking, a more rational principle. It is reasonable to conclude that when a canal, which is naturally open, has become straightened at one particular point of it, that by re-

lieving this straightened part great irritation must necessarily be removed; consequently, the lymph which had been deposited between the interstices of the contracted portion, and which had materially assisted to form the induration, may possibly become absorbed, and thus the part be restored to its natural character. What seems more particularly to illustrate this point is, that sometimes the orifice of the urethra becomes nearly closed, and excessively indurated. In a few cases where I have divided this description of contraction I have found the hardness entirely to subside. The incised part has ulcerated, and secreted pus; but the dense structure all around it has gradually become softened, until it has totally disappeared. It appears also that the membrane lining the urethra where the incision takes place is restored to its healthy structure. This is exemplified by the preparation just alluded to, and likewise by the smoothness of the part when a steel dilator is passed after cure. So little impediment is there to the passage of the instrument, that it would be difficult to tell where the contraction had been present.

It is hardly necessary, for the present, to

adduce any farther argument upon the advantage and necessity of perforation and division of permanent stricture. There are few who will not have the candour to acknowledge, that when an individual can only void his urine by drops; when he has frequent attacks of retention of urine; when he suffers from incontinence of urine; and when, from the pain and irritation arising from the obstruction in the urethra, he has sleepless nights, is reduced to an extreme degree of emaciation, and has the dread of death constantly before his eyes, that the immediate removal of the cause of these grievances is not only an object most desirable to be accomplished, but also "most devoutly to be wished." The facts which I shall relate in the following chapters, will, I am convinced, be so strong in favour of the treatment, that a shadow of a doubt of its great utility and value will not remain even in the most sceptical mind.

ON PERFORATION

OF

IMPERMEABLE STRICTURE.

 CHAP. V.

Simple Perforation: Cases.—Gradual Perforation: Cases.—Perforation of Stricture from accident: Cases.—Perforation of Hæmorrhagic Stricture: Cases.—Perforation and division of more Strictures than one in the same Urethra: Cases.—Perforation of the continuous or long Stricture: Cases.—Perforation of the third or middle Lobe of the Prostate Gland: Cases.

HAVING given an account of the mechanism of the lancetted stilettes, and the modes of employing them, I shall now point out the cases in which they are most applicable. I shall first speak of their use in the imperme-

able stricture, and then shall proceed to show the advantages of their employment in the other various forms of that disease.

The cases in which the urethral perforator is most beneficial are where the contraction is so close and tortuous that it will not allow of the passage of even the smallest bougie or catheter through it. In these the urine can pass only drop by drop, or in so small a stream that it is with the greatest difficulty and torture the patient can expel a sufficient quantity to relieve the bladder ; and it is seldom or ever he can entirely empty it. In such a case the urethral perforator would at one operation, or gradually (according to the length of the contraction), open the contracted part of the canal, and thus allow the urine to flow in a natural-sized stream.

In retention of urine, also, from stricture, this instrument might at once effect a passage, and thus the necessity of having recourse to the distressing and uncertain alternative of puncturing the bladder would be avoided. Instead of being evacuated through an artificial opening into this organ, the urine would pass through its natural channel, by which the

disease which caused the retention would be cured, while, if the bladder be punctured, it still remains, and at the same time subjects the patient to great danger and continued suffering. Although puncturing the bladder answers in some cases, yet it too often happens that the patients, though they are relieved for a time, linger on and die. Examples of this description are not infrequent, and I am convinced there are but few experienced, or at least hospital surgeons, who could not call such cases to their recollection.

In all those cases of stricture also where the caustic was formerly employed, these instruments might effectually be made use of. The mischievous consequences of caustic, on which account its employment is now pretty generally abandoned, I have before discussed. I have already shewn, from the account given of it by Sir E. Home and other writers on this disease, that the most dangerous results may issue from its application—great pain, profuse hæmorrhage, retention of urine, false passages, rigors, violent inflammation, fever, stranguary, and swellings in the perineum. When, however, the urethral perforator and lancetted stilettes have been employed, none of these

symptoms have ever occurred: no evil consequence whatever has followed their application.

The employment of the urethral perforator would likewise supersede the necessity of dividing the stricture from the perineum—an operation so painful and so dangerous that it frequently happens the patient dies from it; and so uncertain is it in its final result, that it ought never to be had recourse to until all other means of affording relief to the patient had failed. Most of the cases of impermeable stricture which I shall relate in the after part of this volume were of that description that they would have required external division had they not been perforated. The cases themselves will shew the expeditious, painless, and effectual manner, in which they were cured, by adopting this plan of treatment.

In cases of partial retention of urine the double armed stilette would be found particularly serviceable. It occasionally happens that after repeated attempts to pass a very fine gum-elastic catheter, in these cases, we at length succeed. How very advantageous would it be, if, under these circumstances, the contracted part was enlarged; for if the cathe-

ter should be withdrawn it is very doubtful whether we should be ever able to repass it. Such cases as these are not uncommon; every experienced surgeon must have frequently met with them; and during the time I was pursuing my studies at St. Bartholomew's, and since that period, I have met with several. In many cases of old and indurated strictures, and where but little can be done for their relief, those afflicted with them have, upon the slightest accession of inflammation, an attack of retention of urine; and sometimes a very small catheter, at this period, can be passed for them, and sometimes not. When the catheter can be introduced, the double-lancetted stilette would immediately, and without danger, accomplish the division of the contraction, freeing at once both the patient's and surgeon's mind of the possibility of the recurrence of retention of urine, and it would at the same time cure the stricture; and when it could not be passed at the time, the inflammation might be reduced, and the contracted part be divided afterwards. In all those cases, also, where there has been extreme difficulty in passing a bougie or catheter, the double-lancetted stilette would be of great service, and might at once relieve them.

There are other cases besides those I have just mentioned, which are not so momentous, but which are so harassing and distressing that life is rendered miserable, and hardly supportable, where the division of the stricture would at once relieve the patient. These are, where the contraction is so hardened, and of so unyielding a nature, that it will not admit of dilatation, or, where dilatation has been repeatedly pursued for a considerable length of time, and the stricture remains unaltered, and returns to its morbid calibre. This is the description of case which I have termed permanent elastic stricture, and which Mr. Hunter, although he has not called it by that name, apparently alludes to, when he says, "it is seldom or ever" (speaking of dilatation,) "more than a temporary cure; for although the passage may be dilated sufficiently for the urine to pass, yet there is always the original tendency to contraction, which recurs sooner or later." In those cases the division of the diseased part would be of great advantage; for, by one incision of the double or lateral-bladed stilette, the contracted portion would at once be made as large as the rest of the canal, and at the same time, (at least, judging from the cases where strictures of this description have been

already divided by this instrument) the induration would completely disappear in the course of a month or six weeks, or even in less time, and the stricture would be permanently cured. Most of the cases where Sir E. Home employed the caustic, and where the distressing symptoms before alluded to occurred, resembled the above. Surely it would be far better to divide the stricture at once, by a simple and painless operation, than to employ a remedy so tedious, uncertain, and dangerous in its consequences. In the next chapter I shall speak more fully upon this particular form of disease.

Besides the cases I have just enumerated, I am convinced that these instruments would succeed in curing strictures when all other modes of treatment have failed.

There are two descriptions of impermeable stricture; one which occupies only a small part of the urethra, the other where the disease extends along a considerable portion, even from one to four or five inches, and sometimes more, of the canal. The first of these is the most simple form of impermeable stricture, and can usually be perforated by one

operation. The second, where the contraction is one or two inches or more in length, being tortuous and irregularly thickened, generally requires the instrument to be used more than once, sometimes several times, according to the length it has to perforate. It is not always, however, the length of the contraction alone which requires the instrument to be employed more than once. The hardness of its structure frequently makes it difficult to penetrate it. It is sometimes so indurated and tough that it approaches to the consistence of cartilage, when it requires considerable force to make the lancet enter into its substance. In such cases, although the stricture may occupy only a small portion of the canal, the perforation cannot always be accomplished at one operation.

I shall now relate some cases of perforation of impermeable stricture; an evidence of treatment far superior to any thing I can offer from general observations.

CASE I.

Impermeable Stricture of five or six years' duration, and which would only permit the urine to flow through it drop by drop, perforated and cured in one month.

JOHN PREDAM, ætat. forty-seven; February 1827. Has been afflicted with stricture of the urethra for about five or six years, during which time he was admitted as a patient into various hospitals and dispensaries, sometimes with and sometimes without relief; but he has never been completely cured. He now suffers much pain in voiding his urine, which passes from him drop by drop, and he has not been able to have the smallest-sized bougie passed into the bladder for the last six months. In other respects he is in perfect health. Upon examination of the urethra, it was discovered that he had a stricture seven inches from the orifice; and frequent attempts having been made to pass a bougie through it without success, it was resolved to divide it with the armed stilette.

Feb. 14th.—Having ascertained the exact distance of the stricture from the extremity

of the urethra, the armed stilette was passed down to it, and it was divided without much difficulty, with but little pain and slight hæmorrhage. There was then substituted a silver catheter of the same size, which was left in the bladder.

He was ordered to take an aperient draught, to foment the perineum constantly with hot water, and to remain in bed.

15th.—He experienced so much pain that he could not keep the catheter in the bladder longer than eleven hours, when it was taken out. He has had almost a sleepless night, but, since the removal of the catheter, has not felt much pain in the perineum. Pulse ninety, and skin rather hot.

Apply twelve leeches to the perineum ; to continue fomenting. The catheter was again passed, and left in the bladder,

16th.—The catheter had remained in the bladder since its last introduction ; but its presence had caused considerable pain, which he attributes to its want of pliability, and its striking, when he moves, against the coats of the bladder ; it therefore was withdrawn altogether. Pulse eighty-four ; skin still hot ; no

sleep; and there was a sediment of mucus in his urine.

To take an opening draught; to apply twelve leeches to the perineum; and to continue fomenting.

17th.—The pain in the perineum had nearly subsided, and he had made water twice without difficulty. The catheter was passed into the bladder with the greatest ease, and was immediately withdrawn. As the draught had not operated sufficiently, he was ordered to repeat it. Pulse eighty-four; slept better; skin cooler.

18th.—Still less pain in the perineum. His bowels had been relieved freely, and he had slept well during the night; pulse seventy-six; skin cool.

The catheter was again introduced.

19th.—Much better: feels pain only when micturating. Catheter passed without trouble. Pulse seventy-four; skin cool.

20th.—Still feels slight pain while voiding his urine, but all other unpleasant symptoms have vanished.

Catheter was passed, and he was ordered another aperient draught.

21st.—Free from pain altogether; feels himself quite well. He makes water without pain, and in a good-sized stream.

For about a month after this period, a large-sized catheter (No. 12) was passed into the bladder, without the slightest impediment, twice in the week. He now voids his urine with the greatest freedom, in as large a stream as natural, and without the least pain. Since this time I have seen him frequently, and no obstruction whatever remains in the urethra.—
July 1828.

In this case it may be observed that the stricture was impassable by bougies, and that it was so close that the urine could only infiltrate itself through the contracted part, guttatim. The perforation was easily effected; it gave but little pain, and the bleeding was but trifling. The only untoward symptom was the pain afterwards, and this no doubt arose from the want of flexibility of the silver catheter, for immediately on its removal the symptoms subsided.

I prefer, for this reason, employing the gum-elastic catheter, which yields to the natural inflections of the urethra, and will allow of any movement of the body without injury to the canal or bladder. The rapid recovery of this patient is remarkable.

CASE II.

Impermeable Stricture of many years' duration, perforated, with the recovery of the patient in six weeks.

APRIL 4th, 1827.—Michael Barry, ætat. fifty-one. This man had been suffering so long with stricture of the urethra, that he could not recollect when he first observed the diminution of the size in the stream of his urine. At present, and for the last two months, however, he has been only able to pass his urine drop by drop, and then with so much pain that his life has been rendered quite miserable to him. Many trials have been made to pass bougies of all sizes, from the largest to the smallest, without avail. Upon measurement the stricture was found to be situated three inches and a half from the glans penis. The armed stilette was introduced to that part, and the stricture

divided, with but little pain and hæmorrhage. The instrument was then withdrawn; and as it was discovered that another stricture existed in the membranous portion of the urethra, which would not admit of the passage of a catheter larger than No. 5, it was judged necessary not to introduce the gum catheter, but only to pass a bougie through the divided stricture every day. This was done for a fortnight, without the least inconvenience, and the other stricture was treated in the usual manner. In about six weeks both were cured; and the man can now make water as well as ever he did in his life.

During the treatment, leeches were applied to the perineum, purgatives given as often as the symptoms demanded them, and the antiphlogistic regimen strictly adhered to.

This case is an excellent example of the superiority of the treatment by perforation. The operation, as in the last case, was easily effected, and but little pain or hæmorrhage ensued. Although the disease had existed for so many years, that the patient could not recollect when he first became afflicted with it, yet in six weeks he got quite well, having,

besides, another stricture in the membranous portion.

CASE III.

Impermeable Stricture, which had twice been operated upon unsuccessfully from the Perineum, perforated.

EDWARD BULL, ætat. forty-five, a sailor. He was invalided from his Majesty's service in 1811, in consequence of an ill state of health, produced by the extreme irritation which arose from a stricture in the urethra. At that period his urine used to ooze constantly from the penis, so that his clothes were always wet. He was much emaciated, and his health had been gradually declining. In 1815 he consulted an eminent surgeon, who discovered that he had a stricture. Bougies were passed until a cure was nearly effected. After this time, however, he neglected his complaint until January 1826, when he became so ill, from the difficulty of voiding his urine, that he procured an admission into St. Thomas's Hospital. Here he stayed for some little time; but experiencing no relief, left it. He became worse, was re-admitted into that hos-

pital, and at length was discharged incurable. On April 6th, 1827, he was received into St. Bartholomew's Hospital, under the care of Mr. Earle.

On passing a bougie, its progress was arrested about six inches from the orifice; and, as no passage could be effected, the stricture was divided from the perineum (June 9th, 1827.) The operation was attended with many difficulties, from the hardened state of the parts round the canal, which resembled cartilage; but not having been present, I am unable to describe them. A catheter, however, was at length passed; and, in about three days afterwards, the patient incautiously allowed it to slip out. Several attempts were made to introduce it again, but without success. The wound in the perineum had nearly closed, when it was thought necessary to make a fresh incision, and to pursue the method as before. This was attended by the same result. The wound again completely closed, and the patient's health began to suffer materially from the disease. He now could only make water in drops, and with considerable pain. In this miserable state the patient continued, having but little hope of relief, until Oct.

10th, when the armed stilette was used. The stricture was completely impermeable, and it was divided by this instrument until it arrived at the prostate, when, on account of the extreme enlargement of this gland (being nearly as large as a turkey's egg), it would not, on this day, pass any farther. On the day following, however, a catheter (No. 8) was passed completely into the bladder, and left there; and its size was gradually increased to No. 12, which can at the present time be passed with great ease, and no obstacle now remains. The wound in the perineum is closed, but on account of the excessively diseased state of the prostate gland, the patient has lost the power of voiding his urine of his own accord: the catheter, therefore, is obliged to be passed whenever he wishes to relieve his bladder. He has greatly improved in health; and, finding no difficulty in passing the catheter, he feels grateful for the benefit he has experienced from the treatment.

The result of this case is a very strong proof of the superiority of the division of stricture within the urethra. This patient was in so very bad a state that he had been admitted twice into St. Thomas's Hospital, and at length

discharged incurable. He then got admitted into St. Bartholomew's, and the operation from the perineum had been twice performed but had failed. In this miserable condition there was but little hope for him: his sufferings were hardly to be endured. The urethral perforator at once succeeded in penetrating the obstruction, and he was relieved, having experienced but little or no pain from the operation.

CASE IV.

Case of Stricture of twenty-eight years' standing, which had been impermeable eighteen years, and which had resisted the use of caustic, &c. perforated.

WM. CHATERS, ætat. fifty, an unhealthy, emaciated man, was admitted into St. Mary-le-bone Infirmary under the following circumstances. He states that he has been the subject of a stricture in the urethra twenty-eight years, and that about eighteen years ago the canal at the part having become so much closed that the smallest-sized bougie could not be passed through it, the caustic was applied several times during the space of three months, without the least benefit; he was therefore

discharged from the surgeon's hands as incurable; and ever since this period he has suffered the worst symptoms which occur from stricture. He has voided his urine *guttatim*, or it has passed away from him involuntarily. He has had frequent attacks of retention of urine, and he has been constantly subject to rigors. Since the application of the caustic, many attempts have been made to introduce a bougie, but they have always been resisted.

Upon examination, it was discovered that an impermeable stricture was present, about six inches down the canal, and that the urethra itself, anterior to it, was in an extremely irritable state; leeches, therefore, were frequently applied to the perineum; fomentations used, and all the other means for reducing inflammation were employed. Occasionally the smallest-sized bougies were introduced as far as the contraction, but they could never be made to pass it. Under these circumstances I was requested by my friend Mr. C. Phillips, the surgeon of the institution, to examine the patient, with a view of operating. Having obtained the patient's consent, on the 2d of November I divided three-fourths of an inch of the stricture with the single-lancetted stilette: the pain was trifling, and the bleeding

only amounted to a few drops. This I considered sufficient at one operation; I therefore withdrew the instrument, and ordered leeches, &c. as in the former case; but the stricture not being divided throughout, I did not leave the bougie in the urethra.

On the following day he had felt but little inconvenience, excepting, as was customary with him after the introduction of a bougie, he was attacked by a slight rigor. He had made water in a small stream.

4th.—To-day a small-sized elastic gum catheter (No. 4) was introduced, with the view of keeping the divided part open; and it passed on through the stricture into the bladder with the greatest facility. It was left in the urethra.

5th.—The catheter remaining in the bladder had caused no unpleasant symptoms; and as the urine escaped on one side of it, as well as through it, it was withdrawn, and replaced by another double its size. This, also, passed with great ease.

In ten days from the operation the urethra could admit through it, without the slightest

difficulty, a No. 13 catheter; and at this present time (Feb. 27th, 1829,) there is not the slightest impediment whatever in the canal.

When we consider the length of time the disease had existed, and the number of years the stricture had been impermeable, the rapid recovery of this patient is astonishing. It often happens, as in this case, that the first operation does not entirely succeed at the time, but on the following day, or, when the bougie or catheter is next had recourse to, it passes with the greatest facility. In these cases it is probable that the stricture is so nearly divided that the remaining portion ulcerates or becomes absorbed.

CASE V.

Stricture relieved by Perforation.

MR. C., a gentleman, ætat. twenty-three, of a nervous temperament, applied to me with stricture, which he had laboured under for two years. For a twelvemonth of this time he

had been under treatment by dilatation with the common bougies ; and when the largest-sized could be passed he was considered by his medical attendant as cured. Six months afterwards he found the stream of urine gradually to diminish, until it was no larger in diameter than that of packthread. He then put himself under my care, and, upon examining him, I found the urethra so irritable that a bougie would not pass.

I ordered him to apply leeches, use fomentations, take anodynes, and introduce opiate suppositories. Under this treatment the irritability of the urethra, in the course of a week or two, diminished, so that I could pass the smallest-sized bougie into the bladder. The stricture (which was six inches from the orifice) was too tortuous to admit a metallic instrument ; I was unable to introduce the directing wire.

Under these circumstances, as I had promised to operate, and my patient was very anxious to have it done, I merely divided about half an inch of the stricture, with the single-lancetted stilette. No bougie was introduced. Leeches were applied once or

twice. My own health at that time compelled me to discontinue attendance for two months. When I was again able to see him, he stated that he was immediately so much relieved, and the stream of urine so much enlarged, that he had done nothing. On my wishing to examine the state of his urethra, he was so afraid of producing irritation that I did not think it right to press it. The stream of urine was quite natural in size.

CASE VI.

Stricture perforated and cured in less than one month.

ISAAC HINCKLEY, aged 50, a patient in the St. Mary-le-bone Infirmary, of a spare habit and sallow complexion, says that he has had a stricture for ten years, and at that period he underwent a course of bougies with partial relief. About two years from the present time the obstruction returned, and he applied to a surgeon, who found it was impermeable by a bougie. Since then he has become so much emaciated, and reduced in bodily strength, that he has been obliged to give up labour. The stricture is situated seven inches from the orifice.

July 24th.—It was punctured with the single stilette, and about one-fourth of an inch of it was cut through: a dessert-spoonful of blood followed the incisions. No further attempt was made for the present.

27th.—A bougie was passed, and the divided part remained open; he had suffered no pain. I ordered an aperient draught, and to foment.

26th.—He felt a little stiffness in the groin, and slight pain while the urine passed; the stream was about the same. Eight leeches were applied.

28th.—A No. 4 catheter was passed with ease into the bladder, and left there.

29th.—No. 4 catheter was withdrawn, and one of elastic gum (No. 10) was introduced instead of it. He could make water freely, and had suffered no pain.

From this time the size of the catheter was increased until it arrived at No. 13.

On the 7th of August he felt himself so well

that he requested to be discharged, and to attend as an out-patient.

It will be seen that in this case the perforation was not accomplished on the first day of the operation. Four days elapsed before a catheter could be passed into the bladder. It is most probable that the stricture was so nearly cut through that the remaining portion of the diseased part either became absorbed or ulcerated, and thus what had been nearly effected by the perforation was completed by one of these processes. Several other cases of the same description, as will presently be seen, have happened in my practice.

CASE VII.

Stricture, where there was a fistulous passage into the Perineum, perforated.

I WAS requested to see a patient in St. Bartholomew's Hospital, by Mr. Vincent. He had an impermeable stricture, situated between five and six inches down the canal, and a fistulous passage connected with the urethra, in the perineum. I operated with the single-

lancetted stilette, and divided through the stricture, (which was of so hard a nature that it required several incisions before it could be permeated), until the instrument touched a probe held by Mr. V. in the fistulous passage. Immediately after the operation a catheter could be introduced into the bladder.

I did not superintend the management of this case ; but I have since seen the patient, and find that a large-sized catheter could be passed with ease into the bladder two or three months afterwards.

CASE VIII.

Stricture, four inches from the orifice, causing retention of urine, perforated, and another Stricture in the membranous portion not perforated.

SEPT. 22, 1829.—Patrick Shannon, aged 38, was admitted into St. Mary-le-bone Infirmary with retention of urine, which he had laboured under for twelve hours. When all the means usually employed in that disease had been resorted to, and when twenty-six hours had elapsed, it occurred to me to try the fol-

lowing plan for his relief, and it was attended with complete success. I introduced into the urethra, as far as I could, to the distance of nearly three inches, a tube with a circular eminence upon it about an inch from its extremity, attached to a syringe; I then passed a ligature round the penis, and tied it firmly in, by which means I was enabled to exhaust the small quantity of air which was in the anterior part of the urethra. The patient was then desired to attempt to make water; in about half a minute a tea-spoonful of urine oozed through the stricture, which was four inches from the orifice; in another minute there was collected in the syringe a dessert spoonful; in the next attempt the syringe was completely full; and in this manner nearly two pints of urine were drawn from the bladder. I mention this fact more particularly, as it appears to me that this method might be pursued as an auxiliary to the means usually resorted to in cases of retention of urine from stricture. On the following day I introduced the single stilette, and perforated the obstruction: I could not, however, pass a bougie completely into the bladder, as another stricture was present in the membranous part of the urethra: he was ordered to apply leeches,

fomentations, &c. In four or five days he began to make water in a tolerably-sized stream. Bougies were now passed for him about twice a week ; but as he suffered greatly from their introduction, and as the stream of urine improved in size so much as to be nearly as large as natural, I discontinued their use. I have seen him a few times since this period ; he always tells me that he continues well, and makes water as freely as ever he did in his life. He has become quite fat, and is enabled to follow his business.

I am obliged for the following case to Mr. Evans, of Chepstowe :—

CASE IX.

Stricture, one inch from the orifice, perforated.

CHEPSTOWE.—In July last, I was requested to see Mr. L., a respectable farmer in this neighbourhood. I found he had a permanent stricture about one inch from the orifice of the urethra ; he had suffered some years from it, and had been in the habit of occasionally passing a bougie with relief : but at this time his

urine would only pass guttatim ; and he was in great pain. Having read Mr. Stafford's book, and being in possession of the instrument marked fig. 6, in the plate, I determined upon the operation. But being apprehensive that he might have spasmodic stricture lower down the urethra, I deferred using it till the following day ; and in the meantime applied leeches and fomentations, and, in fact, followed in every respect the plan recommended by Mr. Stafford. On the following morning the armed stilette was passed to the stricture ; and it was divided without any difficulty, with very little pain, and slight hæmorrhage. A silver catheter was then introduced, and passed without any difficulty into the bladder, where it was allowed to remain. A draught with hyoscyamus was given him ; and he was ordered to take an aperient the following morning. He passed a restless night, and complains of the catheter, which was withdrawn, and leeches and fomentations applied to the perineum. In the afternoon the catheter was again introduced without difficulty into the bladder. The painful symptoms gradually subsided ; and after a few days, a catheter, No. 10, was passed into the bladder twice a week. I saw this patient this morning,

(March 29, 1830): he tells me he is quite cured, and passes his urine as well as he ever remembers to have done at any period of his life.

JOHN EVANS,

Late Assistant-Surgeon to the 16th Lancers.

CASE X.

Stricture, which had caused extravasation of urine, and abscesses, successfully perforated.

A MAN was admitted into St. Mary-le-bone Infirmary, with extravasation of urine, and abscesses connected with the urethra, which arose in consequence of ulceration having taken place behind an impermeable stricture, situated an inch and a half from the orifice. The single-lancetted stilette was introduced down to the obstruction, and it was at once divided: a large-sized catheter was then left in the bladder. The fistulous passages connected with the urethra became healed, and the swelling of the parts around subsided. In about a month he was discharged from the Infirmary perfectly cured.

CASE XI.

Impermeable Stricture of thirty years' standing, in a man of 72 years of age, cured by the Lancetted Stilette or Urethral Perforator.

MR. R. æt. 72, came from the country in May, 1831, to consult me concerning the state of his urethra, which had been the source of considerable annoyance to him for at least thirty years; and latterly the malady had so much increased that he was in constant irritation and pain. He could only pass his urine guttatim, and was constantly obliged to rise during the night to attempt to make water, but he could never empty the bladder. He was in a miserable condition, being much worn and enfeebled; and, as he expressed himself, all he wished was to spend his latter days in a tolerable degree of comfort. On examining the urethra, I found a stricture immediately behind the bulb, which was impermeable to a bougie. The lancetted stilette, or urethral perforator, was passed to the part, and the stricture was at once perforated. A small catheter was introduced into the bladder, and its size was increased every two days. In a

week from the operation they were left off. Steel dilators were now passed every second or third day, until a No. 12 could be introduced with ease. In a month or five weeks he went into the country again, perfectly well; the pain and irritation had ceased; he was enabled to sleep during the whole night without being under the necessity of rising, and he could make water in a full-sized stream. The auxiliary treatment was by aperients, frequently soothing the urethra by fomentations; and when inflammatory symptoms arose, applying leeches to the perineum.

This case shews that even at a very advanced period of life this treatment may be employed without danger. Considering the enfeebled state of the patient, and the duration of the disease, the immediate relief obtained is remarkable.

CASE XII.

Stricture of twenty-five years' standing, where the Caustic and Potassa Fusa had failed, perforated successfully.

MAY 1830.—Mr. W., æt. 47. In his youth, when he was about 20, this gentleman had

contracted a gonorrhœa, for the cure of which he had used strong injections. The discharge ceased, and he thought no more of the disease until two years afterwards, when he found that the stream of urine became smaller and smaller, until it was about the size of a pack-thread. He consulted his surgeon, who employed bougies, and dilated the stricture. Being a good deal in the sporting world, he neglected himself for some years, and lived pretty freely. The stricture gradually returned, and got worse. The part at length entirely closed up, and he could void his urine only drop by drop. He now applied to his surgeon again, who employed the caustic and potassa fusa. Neither of these had any effect in destroying the stricture. He went on in this miserable state for a few years, when his health began to suffer. In May, 1830, he applied to me. He was in a highly nervous condition, and was very timid. I found a stricture situated only two inches from the orifice: it was indurated, and quite impassable by a bougie. He would not consent to my operating with a larger instrument than a small No. 4. I perforated the stricture, which was about half an inch in length, with this instrument, and then passed a gum-elastic catheter into the bladder. He could not bear the ca-

theter to remain longer than a few hours : it was therefore withdrawn. Bougies were now passed every day, and the sizes increased as the patient could bear them. In five days a No. 6 catheter could be passed ; but on that day he received a communication that his wife was dangerously ill in the country. He immediately left London, and I did not hear from him until a year afterwards, when I received the following account :—He says, “ You no doubt have ere this condemned me for neglect or indifference from not writing to you. I was so unfortunate as to take a severe cold, either before I left town, or on my journey down, as to lay me up with a severe attack of rheumatic fever three days after I got to Sheffield ; I have been confined to my bed and room ever since. I am now much better ; and as the weather gets warmer, no doubt I shall soon be better. With regard to the other complaint, the stricture, I am happy to say I have not retrograded, which is a wonder, considering the helpless state I have been in, not being able to introduce the catheter regularly. I can now pass a sound (No. 7), a size larger than the silver catheter you lent me.”

There is but little doubt that had this gentleman remained under my care he would have got

well. His being obliged to leave town just at the time he did was very unfortunate: it was still more so that he got an attack of rheumatic fever. It was gratifying to find, however, when a bougie had not been passed for a whole year after the operation, that a No. 7 sound could be introduced into the bladder.

CASE XIII.

Stricture in a man of 50, of seventeen or eighteen years' standing, which had resisted the use of Caustic and the Potassa Fusa, perforated.

MAY 1831.—Mr. L., æt. 50. This gentleman had suffered from stricture for at least seventeen or eighteen years. He had formerly used the common bougie; but having neglected himself, the diseased part gradually closed up, until he could make water only by drops. The stricture was situated only three inches from the orifice of the urethra; and a hardened mass, like marble, could be felt exteriorly at that part. Both the argenti nitratum and the potassa fusa had been applied from within to the stricture, but neither of

these remedies had the least effect. At the present time he suffers extremely; and the urine being kept back, produces the greatest irritation and pain in the urethra. The straight lancetted stilette was passed, the obstruction perforated, and an elastic gum catheter introduced through it into the bladder. This was changed every other day for one of a larger size. When the stricture was sufficiently dilated by these means, steel dilators were passed twice in the week, until the hardened structure composing the stricture was entirely absorbed. In a month or five weeks he left my care, perfectly well.

This, as in the last case, would have required external division; but the stricture being in that part of the urethra which passes through the penis, it is extremely doubtful whether the wound made in this manner, and in a part so thinly covered, would ever have entirely healed.

CASE XIV.

Stricture of twenty-nine years' duration, perforated.

THE following case (for which I here beg to

thank him) was sent to me by Mr. Abernethy, Surgeon to the Union Dispensary, Farside, Cloyne.

Terence Howard, ætat. 50, land-steward to a gentleman in this neighbourhood, has had stricture of the urethra for many years. He states that so long since as the year 1803, he received a hurt from the saddle, while learning to ride, in the 13th Light Dragoons; in consequence of which the penis was much swollen; but by means of the usual remedies, it was slowly subdued, leaving permanent, however, a small hard tumor in the part. He voided his urine with some difficulty ever since. He has had repeated attacks of gonorrhœa, and after each the difficulty increased, until it amounted to almost a total inability. He has frequently undergone courses of the usual treatment, with bougies, &c. &c., while in the service, from which he was discharged in the year 1817. He was at that time able to pass a small bougie, but soon after found it impossible to introduce any instrument: the attempt has been made at different periods since, by surgeons whom he consulted, but without success. He has not been able to void his urine in a stream for several years; it dribbles

continually, and he is harassed with the most urgent desire of micturition, at very short intervals (accompanied by severe pain in the glans penis), which must be complied with under any circumstance, although no more than a drop or two can be forced out on such occasions. He has frequently of late suffered under the total suspension of even this melancholy and trifling means of relief, being for several hours unable to pass a drop; and whilst writhing under the torture of a distended bladder, declares he could contemplate with satisfaction the awful consequences of its rupture, which, he was convinced, would quickly terminate his misery.

On examination I found a tumor the size of a large marble, hard as a piece of cartilage, devoid of tenderness, occupying the corpus spongiosum, about four inches from the orifice of the urethra, the course of which canal, anterior and posterior to the tumor for more than an inch and a half either way, was marked by an indurated line, feeling as if a piece of whipcord had been inserted. The frænum preputii is deficient; the meatus urinaris laid open, exhibiting the cicatrix of former ulceration. The patient says he can

feel the urine advance from the bladder in a column, until it reaches the indurated part of the urethra, close behind the symphysis pubis, where it suddenly becomes arrested. A small silver probe cannot be passed farther than an inch from the meatus, the surface of which is tender and excoriated.

In this case, according to the patient's statement, dilatation had been tried, and proved ineffectual, and now appears quite impracticable. Caustic and all other escharotics are out of the question, on account of the length of the strictured portion; and its situation presents several objections to the operation for artificial urethra, by external incision; requiring the total division of the scrotum, to be followed probably by infiltration of urine; and as the penis should be nearly its whole length laid open, the complete union of the wound over the catheter would be an exceeding questionable result. He had lately requested a surgeon to perform this latter operation on him, which he described as having witnessed in a military hospital, but it was prudently declined.

Thus cut off from a prospect of success in

any plan of treatment I had seen practised, and having read some similar cases in which you had successfully employed the lancetted stilette, I at once determined to attempt piercing the stricture from within. Accordingly I proceeded to operate as follows:—

May 9th, 1832.—Finding that I could not introduce the canula beyond an inch from the meatus, I laid it aside; but before employing the single-bladed stilette, I resolved to use every effort to introduce the fine wire which the canula carries, unsheathed; this, by long and steady perseverance, I succeeded in effecting. In the passage of the wire through the indurated canal it observed an exceedingly tortuous course, so that had it not been for its flexibility, as well as its extreme tenuity, it could never have passed. When sufficiently introduced, I applied the double-lancetted stilette, and carried it steadily forward through the entire of the strictured portion, until, the lancet being withdrawn, the instrument passed onward without further obstruction. While cutting through the callous tumor considerable resistance was offered, resembling that which a half-ossified sterno-costal cartilage might give the knife. A No. 8 catheter was then

introduced, and passed freely into the bladder; on being withdrawn, a few drops of blood followed from the wound, and soon after a considerable quantity of dark-coloured ropy mucus was passed from the bladder. The patient did not complain of pain during the operation, but declares he scarcely felt it being done. 10th, next day.—The patient has passed urine in a tolerable stream several times since the operation, and does not feel the desire so often as before it. Complains of some smarting while passing urine, and slight tenderness in the penis: he was directed one ounce of mag. sulph. and barley water, six leeches to the part, and fomentations. 11th.—The inflammation of the part much reduced: the patient has been out about his usual business: can retain his urine for two or three hours, and passes it without difficulty or pain in a full stream.

A bougie was passed every day for a fortnight, increasing the size to a No. 10. At first this caused more pain than the original operation, and for the first few days was followed by a drop or two of blood each time. The smarting in making water soon disap-

peared: the tenderness on introducing the bougie continued for some time, chiefly felt in the part anterior to the tumor. The bougie was smeared with ung. hydr. nitr. oxyd.; and after the first fortnight was introduced only every second or third day for a few weeks more. The patient continued to introduce the bougie once or twice a week for two or three months; long after all uneasiness or difficulty in introducing the instrument had ceased. He was never an hour confined in consequence of the operation, after the first day; and has since enjoyed better health than, he says, he ever had since a boy.

Feb. 5th, 1833.—I have this day examined Howard, and find that the tumor above described has nearly disappeared, being now scarcely as large as a pea: the indurated line is quite gone. All irritability of the bladder vanished immediately after the operation; he is able to retain his urine for the normal period, and void it with force in a full stream, without the least difficulty. A large-sized bougie may be passed into the bladder without the slightest pain or difficulty.

The history of this case is so ably and so fully detailed by Mr. A., as to render any observation of mine unnecessary

CASE XV.

Stricture, producing retention of urine, perforated.

IN September, 1832, I was sent for to see a gentleman in Wales. When I arrived there I found him labouring under retention of urine; and, after having applied leeches to the perineum, placed him in a warm bath, and employed the usual remedies, without relief, I at once proceeded to operate. The stricture was only three inches down the canal, and was quite impermeable. By three incisions with the blade of the urethral perforator the stricture was permeated: a catheter was passed, and more than three pints of urine drawn off; it was left in the bladder three days. When I felt that my patient was secure from a return of retention, I left him, requesting him to follow me up to town to complete his cure. He did so: steel dilators were passed, until the stricture was made as large

as the natural size of the canal. He has remained well ever since.

There is but little doubt that had not the urethral perforator been successfully employed in this case, the bladder must have been punctured.

CASE XVI.

*Case of Stricture, which had produced Impotence, &c.
perforated.*

MAY 18, 1833.—Mr. R., æt. 49. This gentleman, about eighteen years ago, contracted a gonorrhœa, which, in consequence of his surgeon having died soon after he had consulted him, was neglected, and improperly treated. From this cause hernia humoralis was brought on, then strictures, and, two or three years afterwards, retention of urine. During the first part of the complaint he led a very irregular life, drinking and sporting; so that the gonorrhœa continued on him for two or three years: at length, however, he found a difficulty in voiding his urine. This increased until it only flowed by drops, when

he became seized with severe rigors and retention of urine. No instruments could be passed into the bladder; and therefore, when he was recovered from this attack, caustic was employed four or five times, with the view of destroying the stricture. Its application produced a very alarming hæmorrhage, so much so that the surgeons who attended him were afraid to continue its employment. By using it, however, they were enabled to pass a bougie through one stricture four or five inches from the orifice. Another was then found an inch further on. This also was overcome, when a third, much worse than either of the others, was discovered at the bulb; it was quite impermeable to any urethral instrument, and appeared to be of a very indurated structure. As no other remedy but the caustic (excepting the division of the stricture from the perineum) offered the slightest chance of relief, its application was again proposed by other surgeons. The patient, however, having suffered so much before, and having nearly lost his life from hæmorrhage, declined its use. Since this period he has suffered most severely, and informs me, so distressing and urgent have his symptoms been, that he really believes he has sometimes got up thirty or forty

times during the night, to endeavour to make water; and in the day he has had incontinence. The straining and pain also have been so great, during the attempt to void the urine, as to cause total blindness for half a minute at a time, and frequently to force an evacuation of the fæces. The genital organs likewise have become wasted and impotent, and the lower limbs extremely feeble.

Finding that he had derived no benefit from treatment in this country, he went to Paris, to consult the French surgeons. He did not, however, reap any advantage from the remedies they employed; consequently, having heard of the method of perforating strictures, he was recommended by his son, who was then studying medicine in that metropolis, to return to London, and place himself under my care.

On examining him I found him to be much in the state above described, and that he had an impermeable stricture situated at the bulb. After having prepared him for the operation, I introduced the urethral perforator, and cut through half an inch of stricture. A small gum elastic catheter was then introduced

into the bladder. On the alternate days the size of the catheter was increased by the introduction of another. A No. 13 could be passed in less than a fortnight. Steel dilators were now passed twice in the week; and in six weeks from the operation this patient left my care, being able to make water as well as ever he had done in his life.

The urgent desire to void the urine very frequently, is common in the worst stage of stricture; and it is one of those symptoms, occasioning fatiguing and restless nights, which tends to wear out the patient. The most remarkable symptom in this case was the temporary blindness at the time of micturition. This most probably arose from the straining, producing an obstructed circulation of blood through the lungs, whereby the return of blood to the heart was prevented, thus causing a determination of blood to the head; by which, probably, the optic nerve and the retina were affected. I have often seen the same occur, in a minor degree, in passing a bougie, owing, perhaps, to another cause—the nervous excitement, as in blushing, producing a determination of blood to the head. In one instance, the nose has always bled; in another, the con-

junction has been suffused with blood; and in many, the face has become very red and flushed. Impotence is by no means uncommon in stricture. The erectile and ejaculatory power is frequently lost, or the semen is kept back by the closure of the stricture, and thus impregnation is prevented.

CASE XVIII.

Stricture, producing Retention of Urine, perforated.

IN September, 1833, I was requested, in consultation with Mr. Walker, of Piccadilly, to see a gentleman who had laboured under retention of urine for more than two days, and who had had permanent stricture for some years. The bladder was extremely distended, reaching as high as the umbilicus; and he was suffering the most excruciating agony, not being able to void even a drop of urine. Mr. Walker had most judiciously employed every remedy in his power, but without effect, and the smallest catheter could not be passed farther than five inches down the canal. Under these circumstances, and as the bladder must

otherwise have been punctured, I proposed the perforation of the stricture. Accordingly I introduced the urethral perforator, and gradually cut through about an inch of stricture, which enabled me to pass a catheter fully seven inches. There was, however, so much spasm, that it was impossible to get it into the blade. We therefore placed him in a warm bath, and bled him to four-and twenty ounces. On taking him out of the bath he was ordered a dose of *liq. opii sed.* (25 minims), and we agreed to meet, (thinking that, being under the influence of opium, he might be more tranquil,) early in the morning, to make another attempt to pass the catheter, or, if we failed, to puncture the bladder. We met at eight o'clock: a catheter was then passed with the greatest ease, and at least three pints of high-coloured acrid urine was drawn off. The catheter was left in the bladder, and changed for one of a larger size every other day; and in a fortnight a No. 12 could be passed with the greatest facility. He has continued well ever since.

It will be seen that this patient was reduced to the very last extremity before the stricture was perforated. There is no doubt, had not

this operation been performed, the bladder must have been punctured.

CASE XVIII.

Stricture of thirty-five years' duration perforated.

APRIL 2d, 1834.—Mr. H., æt. 57, first felt symptoms of stricture in the urethra at the age of 22. Six years afterwards it had so much increased that he was obliged to apply for surgical advice. Sixteen years after this period the passage was so contracted that he got an attack of retention of urine, which was so violent that his life was considered in danger. For thirteen years afterwards bougies were passed by different surgeons, but none could ever be got into the bladder. In March, 1834, he applied to me, and I found he had an impermeable stricture at the bulb. I passed the urethral perforator, and divided the stricture at one operation. From this period steel dilators were passed, until a No. 13 could be introduced with ease. During the whole time, this patient went about, and followed his usual occupation.

In this case, as in many others which I have already published, no other treatment (excepting the division of the stricture from the perineum) could have been adopted but perforation.

CASES OF STRICTURE WHICH HAVE REQUIRED THE URETHRAL PERFORATOR TO BE USED MORE THAN ONCE.

The following cases are those, which, from the great length of the contraction in the urethra, or the extreme hardness of the part, could not be perforated at one operation. Some strictures occupy so great an extent along the canal, being one, two, or three inches, and even more in length, that it would be unsafe to attempt to perforate them all at once, on account of the danger of making a false passage. I have therefore gradually and cautiously cut through this description of case, seldom or ever dividing more than the fourth of an inch at a time. In this manner, and by passing a bougie daily, to keep the divided part open, and to assist in the absorption of the indurated matter, I have succeeded in getting through strictures of three or four inches in length; I have found also, during

the progress of the operation, that the callous structure of the contraction has disappeared as far as the cutting has continued; so that when the whole has been perforated, the stricture has been nearly cured.

CASE XX.

Perforation of Stricture where the instrument was used twice.

GEORGE EDWARDS, ætat. twenty-five, admitted into St. Bartholomew's Hospital, May 12th, 1826, with stricture of the urethra, under the care of Mr. Lawrence.

About five years ago he first found the stream of his urine diminished in size, from which time until the present it has gradually become smaller and smaller. He has, for the last eight months, been incapable of voiding it in any other manner than drop by drop, during which time, also, he has had frequent attacks of retention of urine, accompanied with hernia humoralis. He suffers much pain in the region of the pubes, has frequent desire to make water, and there is a deposit of mucus in his urine. His tongue is furred,

pulse quick, and his general health much impaired. When his urethra was examined, an impermeable stricture was discovered at the distance of five inches and a half from the orifice, at the glans penis.

He was ordered milk diet, and placed on a strict antiphlogistic regimen. Leeches were applied frequently to the perineum, occasional warm baths used, and the smallest sized bougies of every description passed as far as the stricture twice in the week, with the hope of permeating it.

June 5th.—All these means having failed, the armed catheter was introduced as far as the stricture, and used as before described. Three-fourths of an inch of the stricture were divided, and, as this was the first time of using the instrument, no farther attempt was made. As it was thought bougies might tend to keep up inflammation, their use was for the present discontinued. In other respects the case was treated as before.

12th.—On the first day after the operation he made water in a larger stream than he had done for some time past, but on the following

day much worse ; indeed, for a few hours he had total retention. For this reason the use of the armed catheter was nearly being abandoned ; but as it was suggested that the man might have become worse, owing, probably, to the reunion of the divided surfaces of the stricture, another trial was given to the instrument. Accordingly, on the following day its use was had recourse to again, and it was found, as suggested, that the divided portion of the stricture had closed. This, with a very little force, and without pushing out the lancet, was separated. An inch more of the urethra, with the aid of this instrument, was passed. A bougie was introduced every day, to prevent the divided part from closing ; when, on Friday the 16th, the armed catheter was again employed, and, with one slight puncture with the lancet, passed with the greatest facility into the bladder. It was then withdrawn, and a silver catheter (No. 9,) was introduced instead of it, and a pint and a half of urine drawn off. He was ordered to keep constantly in bed, and to foment the perineum.

17th.—The catheter caused so much irritation that he could not keep it in the bladder

longer than six hours. He had suffered some pain in the perineum, but had slept during the night.

He was ordered to apply twelve leeches to the perineum, to take an aperient draught, and continue fomenting. The catheter was passed, and withdrawn.

18th.—Had not suffered so much pain; slept tolerably well; and had had his urine drawn off twice without difficulty. Pulse eighty; urine thick, and a sediment of mucus at the bottom of it. The draught had operated three or four times.

To continue fomenting the perineum.

19th.—Had a restless night; felt pain in the perineum, but more in the region of the pubes, and the glands of the groin were swollen. His urine has been drawn off twice, however, without difficulty. To apply twenty-four leeches,—twelve to the perineum, and twelve to the groin. To take five grains of calomel and twelve of jalap immediately. Constantly to foment the perineum and region of the pubes.

In a few days the irritation of the urinary organs subsided, and the man went away nearly cured: but having discharged himself from the hospital, any further progress in his case was prevented. At this period, however, a catheter (No. 10) could be easily passed, and he suffered no pain whatever.

CASE XX.

Stricture perforated at two operations.

RICHARD LEGG, ætat. forty-four, admitted into St. Bartholomew's Hospital, with impermeable stricture of the urethra, under the care of Mr. Earle, 28th Sept. 1827.

In his youth he had experienced several attacks of gonorrhœa, which, in the second stage, were usually cured by astringent injections. During sixteen years he has been afflicted with a stricture of the urethra, which has been more or less troublesome to him, sometimes causing him to make water with extreme difficulty, and at others, in a tolerably-sized stream. For the last two years,

however, his urine has infiltrated itself through the contracted part only by drops, accompanied with great pain and straining while voiding it, and often being totally suppressed. His health is much impaired; he has frequent attacks of rigor; and, in consequence of a perpetual fear of retention of urine, he has been obliged to give up his employment. The stricture is situated at the distance of five inches and a quarter from the orifice: it is quite impermeable, and appears to be of an indurated and cartilaginous character. No bougie, or instrument of any description, has been passed through it for five years; and, though frequent attempts have been made since he has been under treatment at the hospital, yet not the slightest benefit has been derived from it. Thus circumstanced, he was determined to undergo any operation that might relieve him; and it was first suggested to divide the stricture from the perineum; but as cases of this description had already been permeated by the armed catheter, Mr. Earle decided upon making use of this instrument, which he did in my presence.

Oct. 19th. — The lancetted stilette was

passed as far as the stricture, which, as before stated, was five inches and a quarter from the orifice. The lancet was then thrust forward, and allowed to retreat, and the blunt point of the instrument urged cautiously along the course of the urethra. With about three punctures, three-fourths of an inch of the stricture were divided, giving apparently but little pain. The ground already gained being considered sufficient for the present, the catheter was withdrawn; and to guard against inflammation, he was desired to keep in bed, to foment, and to apply twelve leeches to the perineum, and to take an active purgative.

20th.—He had experienced no unpleasant symptom whatever from the operation; but rather felt himself relieved, being able to make water in a larger stream. He felt no pain, his pulse was tranquil, and he had slept well during the night. On this day he required no medicine.

24th.—An instrument was passed to the stricture, and it was found that the part divided had not closed. He still felt himself

benefited, and was very desirous of having the same instrument again employed.

27th.—On this day the remaining portion of the stricture was pierced with one incision of the lancet, and the catheter passed with the greatest ease into the bladder, and left there for about two hours; when a gum elastic (No. 10) was introduced in its place. He was ordered to remain in bed, and to foment the perineum.

28th.—He had suffered but little pain, and had slept well. Pulse seventy-six; skin cool, and tongue clean. He requires no medicine. Ordered still to wear the catheter, and foment.

29th.—Much the same as yesterday, in every respect.

30th.—Still going on well.

31st.—The catheter was withdrawn; no medicine required.

Nov. 1st.—A catheter passed (No. 10), and he was desired to keep it in the bladder for one hour. He gets up as usual.

Since this period a catheter has been passed daily, gradually increasing the size until it reached No. 13. On Nov. 20th, being only one month under the treatment, he was discharged from the hospital, perfectly cured; and not the slightest remains of the stricture could be perceived.

CASE XXI.

Stricture perforated at two operations.

J. M., ætat. thirty-seven.—Jan. 1828, has been suffering from stricture in the urethra for many years; and, from my own knowledge, it has been impermeable for the two latter. From the excessive irritation produced by the disease, he is reduced almost to a skeleton, and has become excessively dejected. He assures me he has not slept for two hours together for two years; indeed, hardly one hour elapses without an inclination to make water, and he is immediately obliged to rise from his bed to relieve himself. The stricture is situated six inches from the orifice; and, in addition to it, there is an enlargement of the

prostate gland. Although this latter affection was rather unfavourable, yet, from the extreme sufferings of the patient, the armed stilette was introduced, and half an inch of the contracted portion of the urethra divided on the first day of its employment. The usual methods, leeches, &c., being prescribed, no bad symptoms arose in consequence; so that in two days afterwards (Dec. 13th), the rest of the stricture was, by the same means, permeated. Fomentation and local blood-letting from the perineum were repeated, and the catheter passed as far as the prostate gland; but, in consequence of its enlargement, I found it difficult to get it any farther, and therefore did not persist in its introduction.

On the next morning after the operation he informed me that he had slept four hours together (which he had not done for a period of two or three years before), and that he had made water in a tolerably-sized stream. From this time he improved in health, became fat, and regained his strength. A catheter (No. 12) could be passed as far as the prostate, but I never could make it enter into the bladder. His urine, however, continued to flow from him freely; and he felt quite content

to be so far relieved. I have seen this patient since, and I found that he was as well as he had been ever since the operation. I could not get a bougie through the prostate gland. He made water very well, and was as fat as when he left the Infirmary, and he was able to work without inconvenience. This was more than a year after I attended him.

CASE XXII.*

Stricture perforated at four operations.

WM. TREVILIAN, forty years of age, many years at sea, great part of the time in warm climates, has had stricture in the urethra at least fifteen years to the best of his recollection; thinks he had gonorrhœa once, but never made use of injections. He applied to me on the 22d of February last, at which time he was able only to make water by drops with great straining and pain; the symptoms have been gradually becoming more severe for the

* I was favoured with an account of this case by Mr. Armstrong, of Kennington.

last two years, and at times a total suppression of urine has taken place, which has given him great alarm and anxiety. Had never applied to any surgeon before, nor had any attempt been made to pass any instrument; general health much impaired, and low in spirits; says he has not slept two hours together for the last two years, from the frequent inclination to make water, which obliges him to rise from bed to relieve himself.

I passed a No. 6 bougie, with considerable difficulty and pain, six inches and a quarter down; several drops of blood followed the removal of the instrument: there appeared to be a considerable degree of irritability throughout the canal. He was ordered to foment frequently, and to rub in a little of the ung. hyd. f. every night into the perineum; the bowels to be kept open, and to observe a strict antiphlogistic regimen; barley-water for common drink.

August 4th.—Since February he has been seen by me once or twice a week, but having a wife and family, with an aged mother, depending upon him for support, he has been obliged to attend his business in town until

to-day. From his master having become a bankrupt he is now determined to confine himself, and have something done. His general health is much improved. Catheters and bougies of various sizes have been used, but the passage is still impervious farther than six inches and a half. Leeches have been applied to the perineum occasionally, and fomentations, attending to the state of the bowels, adhering strictly to the antiphlogistic plan of treatment. He can now make water with less stranguary, in a moderate tortuous stream, and can retain it comfortably five or six hours. I explained to him Mr. Stafford's new instrument, and the benefit he was likely to receive from its use; he readily agreed to it, and having ascertained the exact situation of the stricture, six inches and a half, the single-lancetted stilette was passed down to it, and the lancet thrust forward, and then withdrawn: about a teaspoonful of blood followed; a bougie was now passed easily, six inches and three-quarters, having gained a full quarter of an inch. He was ordered to keep his bed, to apply six leeches, use fomentations, and take a purgative.

5th.—Passed a No. 9 bougie, seven inches;

but the stricture still impervious farther to the smallest instrument: the stream of water much the same.

28th.—Having passed a bougie every second or third day, I can now introduce a No. 10 full seven inches. This day Mr. Stafford's instrument was again introduced, and with two cuts of the lancet I found I had gained nearly half an inch: little hæmorrhage, and very little pain. He was ordered to go to bed, apply six leeches, and foment.

29th.—Had a good night's rest; pulse natural, bowels open, no medicine; makes water without straining; the stream, however, does not appear improved.

30th.—Passed a bougie to-day nearly seven inches and a half: the resistance to the instrument feels as hard as before, and impervious to any instrument.

As I had now gained upwards of an inch, and was still unable to pass any instrument farther, I determined to call in the assistance of Mr. Stafford, and on the 3d of September I went with my patient to that gentleman's house.

He found, on examination, the stricture nearly as above described, permeable nearly seven inches and a half from the meatus urinarius externus. He passed the armed stilette, and with two cuts divided half an inch, as he afterwards passed a silver catheter eight inches; slight hæmorrhage followed. Twelve leeches were ordered to the perineum, fomentations, and a brisk cathartic to be given, and to keep his bed.

4th.—Passed a good night, free from any unpleasant symptom: bowels open, pulse natural.

5th.—Passed a catheter with very little pain or rèsistance eight inches: no improvement in his stream of water.

11th.—Mr. Stafford used the lancetted stilette again to-day; about a table-spoonful of blood followed the incisions: still impervious and very irritable. Leeches, fomentations, and aperients, to be continued.

14th.—This day, on using a No. 1 catheter, with very slight pressure, I was gratified to find it pass into the bladder, where it re-

mained for some time without giving the least pain. To continue fomenting frequently, and to take aperients occasionally.

17th.—He now makes water in a better stream. On using a silver catheter to-day, I found considerable resistance from spasm. Twelve leeches were directed to be applied to the perineum, and the fomentations, &c. to be continued.

21st.—Considerable spasm still. Twelve leeches to be applied, and fomentations frequently.

23d.—The leeches to be again applied, and to take 30 drops of the balsam. copaibæ, in a mixture with the p. g. traj. c. ter. in die.

25th.—Urethra still irritable, with slight ardor urinæ. Cont. med.

27th.—Passed a No. 1 catheter into the bladder this morning, where it was secured, and ordered to remain as long as it gave no pain: bowels open; no medicine given.

28th.—The catheter was removed this

morning, after which he made water in a clear good-sized stream.

In about a week from this time the wire was passed through the stricture, and it was enlarged with the double-lancetted stilette to the natural size of the urethra. Bougies were passed for a fortnight longer, when the patient was discharged cured.

CASE XXIII.

Stricture perforated at two operations.

AUGUST, 1830.—L. Snowdon, ætat. 40, a printer's compositor.

This man applied to me with a diseased urethra, which began to be contracted at one inch from the meatus urinarius, and extended nearly two inches along the canal. Externally the part was extremely indurated; and when pressed between the finger and thumb it felt as if a piece of small cord had been lodged in that portion of the urethra. From the patient's account the disease had originated in consequence of a very virulent

gonorrhœa, which he had contracted three years ago, and from which time the passage at that part had gradually narrowed, until it became so closed as only to allow of the urine passing through it guttatim. In the early stage of the disease bougies had been passed; but for the last two years no instrument whatever could be got through the stricture. The poor fellow was much emaciated, and appeared to have suffered considerably.

As my friend, Dr. Eckström, professor of surgery at Stockholm, was very desirous to see the treatment, I requested him to examine the case. He was of opinion, from the great extent of the disease, its situation in the urethra, its indurated structure, and its impermeability, that no other treatment could, with success, be adopted than its perforation by the lancetted stilette. I accordingly at once cut through, in his presence, about half of the strictured portion, leaving a bougie in the divided part for one night, to keep it open. On the following day it was withdrawn, and introduced daily. In a week from the first operation I completed the division of the part, and introduced a No. 9 catheter into the bladder. Steel dilators were now passed on the alternate days

until they arrived at the size of No. 11. The patient, finding himself nearly well, discontinued his attendance on me. I have since heard he is quite recovered, and that he makes water in a natural-sized stream. The treatment occupied from three weeks to a month, and during the whole time no unfavourable symptom whatever occurred.

From the preceding history of this case it may be observed that two inches of the urethra was irregularly thickened, and contracted to such an extent that the urine could only infiltrate itself through it guttatim. The part of course could not be dilated, for it was impermeable to a bougie. The extent of the disease also prevented the application of caustic, for it would have been almost impossible to have burnt through so long a contraction with this substance. The division of the part externally, likewise, (if ever to be recommended,) would in this instance, from the situation of the disease, have been of no service, and most probably attended by serious consequences. What treatment, then, was left for the poor sufferer? None of the above could have given him any relief. In course of time the urethra would have entirely closed up

at that part, and then ulceration behind the stricture would have taken place, giving rise to extravasation of urine, with fistulous passages; or he would have lingered on, as many others have done, and at length would have been worn out by the disease, and have died. It will be seen the simple way by which the employment of the lancetted stilette permeated an obstruction which could not by any other means have been overcome.

CASE XXIV.

Impermeable Stricture of from twenty to thirty years' standing—Failure of Bougies and Caustic—Cure by the Lancetted Stilette, at two operations.

GEORGE STEVENS, æt. 50, was admitted into the St. Marylebone Infirmary, Jan 14, 1831, with an impermeable stricture situated at the bulb. He had been afflicted with this disease (which originated from gonorrhœa), from between twenty to thirty years, and latterly has suffered so much from it, that he thinks the irritation of the urinary organs brought on a paralytic seizure of the left side, which he has now laboured under for more than a year. For some years past he has made water only drop by drop, and the blad-

der can never entirely empty itself. The urine is of an alkaline character, and mucus is deposited at the bottom of the vessel in which it is contained. Bougies, caustic, and other means, from time to time have been employed, but never with any relief. About a week after his admission I made an attempt to perforate the stricture, and got through half an inch of it. The part was kept open by passing a bougie every other day. He suffered no pain nor constitutional symptoms that required more than fomenting the perineum, and taking an occasional aperient. In a week from the last operation I again employed the lancetted stilette, and at once succeeded in perforating the obstructed part in the canal. A small gum elastic catheter was immediately passed into the bladder, and left there. In two days this was changed to one twice its size. The catheter now produced considerable irritation, so that it was left off altogether. Bougies and steel dilators were consequently passed every second or third day, until the strictured part was as large as the natural size of the canal. On March 15th he left the hospital, and could make water in a full-sized stream.

It is not improbable that the irritation pro-

duced by the stricture brought on the paralytic affection. The sympathy between the urinary organs and the brain is very remarkable. Hence we frequently see diseases of the kidney, bladder, and urethra, terminate in urinary coma and serous apoplexy. This case could not have been treated successfully by any other plan. It had resisted the common modes—bougies and the application of caustic. Division from the perineum, independently of its uncertainty, would most probably, from the severity of the operation and the state of the patient, have caused death. The milder, and perhaps the most natural method, was the one pursued—perforation of the stricture within the canal of the urethra.

CASE XXV.

Stricture that had resisted Bougies and all Urethral Instruments, perforated and cured by two operations.

GEORGE PACE, æt. 20, was sent to me by my friend Mr. Evans, surgeon, of Hampstead, Dec. 16, 1831. He had a stricture, brought on from gonorrhœa, in the membranous portion of the urethra, which had resisted the passage of the smallest bougies, and every description of urethral instrument, for four

successive months. His sufferings were very great; the urine passed only drop by drop; he had considerable pain in the loins; and when he attempted to void the contents of his bladder, the straining was so great that his eyes immediately became blood-shot. He had sleepless nights, tenesmus, and a constant desire to make water, without being able to effect it. The lancetted stilette, or urethral perforator, was passed down to the stricture, and two incisions made. A tea-spoonful of blood followed the incisions. He was desired to go home, and keep quiet; to take an aperient; to foment the perineum; to apply leeches, if the pain was great; and to have a bougie passed on the alternate days. This he did, and returned to me in a week. Two more incisions were made, the stricture was perforated, and a No. 10 elastic gum catheter passed into the bladder. He went home immediately in a coach, and, under the superintendence of Mr. Evans, wore the catheter for a day or two, when it caused so much irritation that he was obliged to leave it off. Bougies were ordered every other day, and in a fortnight from this period a No. 12 steel dilator could be passed into the bladder with the greatest ease; and there was so little im-

pediment in the urethra, that it would have been impossible to have told where the stricture had been present.

In this case it would have been necessary to have divided the stricture from the perineum, had not this treatment been adopted. Besides the pain and uncertainty of such an operation, the time it takes to restore the urethra by this method is considerable, not taking into account the imperfect manner in which it is usually performed. The superiority of the treatment by perforation cannot admit of a doubt; it is accomplished without much pain; with but little loss of blood; the urine flows through the natural channel; the time taken is comparatively short; and the cure is complete.

CASE XXVI.

Stricture, with fistulous openings in the Perineum, and a false passage into the Rectum, perforated at four or five operations.

OCT. 10, 1832.—Captain J., a naval officer, æt. 60, gives the following history of his case:—He contracted a stricture at the age of twenty-five, which embittered the greatest portion of his life, having brought on, at different periods,

incontinence of urine, fistulous openings in the perineum, and a false passage into the rectum. In the early part of the disease he paid but little attention to it, until incontinence of urine came on, and afterwards urinary abscesses, produced by the urethra having ulcerated behind the stricture, and allowing the urine to escape. He then consulted Mr. Whately, from whom he obtained considerable relief. After Mr. Whately's death the stricture returned, and he then placed himself at different times under the care of other surgeons, but without receiving much benefit from their treatment. He at length, in 1824, consulted Dr. James Arnott, who employed the dilator invented by him, from which he obtained considerable relief, being enabled to pass a large sound into the bladder, and making water in a full-sized stream. By the aid of passing occasional bougies, which kept the stricture open, he continued pretty well until 1831, when, finding that the disease had returned, and that the stricture had nearly closed up again, he attempted to use the dilator himself; in doing so, however, he had the misfortune to burst the urethra, and thus to break a passage into the rectum. Considerable hæmorrhage followed the rupture of the canal, which was suc-

ceeded by a very severe fit of illness. Some few months after his recovery, and finding he could only void his urine by drops, he passed a bougie for himself, but was baffled in the attempt: the stricture was impassable. He now consulted a surgeon of the greatest eminence in the city, who found he had a false passage leading into the rectum, and that no instrument whatever could be got into the bladder. Under these circumstances he advised him to make no further attempt for the present, fearing that the passing of instruments might only add to the mischief already done. He followed this advice; but the power of expelling his urine having greatly diminished, he became highly nervous, and fell into a state of despondency, having before his eyes the constant dread of complete retention, without the hope of relief. As a last resource he came to London, and placed himself under my care.

On examining him I found the cicatrices of old fistulous sinuses in the scrotum and perineum, and that one of them still remained open, and allowed a few drops of urine to escape through it. I passed a bougie. Its progress was arrested in the membranous por-

tion of the urethra, and, on passing my finger into the rectum, I could feel an opening which appeared to come out from the urethra immediately behind the bulb. By pressing on the bougie I discovered also another false passage, leading on one side of the urethra. Although there was great difficulty in preventing the point of the urethral perforator from getting into one of these false passages, yet by placing my finger in the rectum, and guiding the point of the instrument, I was enabled to cut in the right canal. I was, however, extremely cautious, and never made more than one or two incisions at most at a time. After employing the urethral perforator four or five different times, I accomplished the perforation, and left a catheter in the bladder, which remained there for a week or ten days, the size being increased every other day, until it arrived to a No. 12. Steel dilators were then introduced twice in the week, and in six weeks from the time he first came under my care he went home quite well, making water naturally, and being able to pass a large-sized (No. 13) sound into the bladder. The false passage communicating with the rectum healed up, and the urine did not, as it had done before, pass through the one in the scrotum.

A more difficult case could not well have been offered for treatment than the present, on account of the false passages, and the difficulty of preventing the instrument entering into them. It is of the utmost importance that the operator should be certain, when there are false passages, that he is in the right canal, or otherwise, by cutting on in them, he may do incalculable mischief, and run the risk of destroying the patient. In such cases, therefore, the greatest caution is necessary; and more than one or two incisions ought never to be made, on this account, with the urethral perforator at one operation.

It would appear from this, as well as from other cases where it has occurred, that when the urethra is ruptured or torn, it is usually followed by considerable hæmorrhage.

CASE XXVII.

Stricture, producing Impotence, perforated.

JULY, 1833.—Mr. C., æt. forty-three, a gentleman of a highly nervous temperament, applied to me under the following circumstances. He had been afflicted with stricture ever since

his boyhood ; which latterly had so distracted and fretted him, from the constant pain and irritation he felt in the urethra, that he could hardly speak of his complaint without weeping. He had an anxious and worn out countenance ; he had become emaciated and feeble ; he seldom got any sleep, and had entirely lost his appetite. The urethra was so irritable that he could not at first bear the introduction of a bougie without fainting, and feeling the sensation as if a red-hot iron were passed ; and he voided his urine only by drops. He had lost the erectile power of the penis, and was quite impotent.

After some trouble and difficulty I at length got him into such a state as to bear the passage of a bougie, and found a stricture situated seven inches from the orifice. As he suffered much pain in passing the instrument, and as the urethra at the strictured part was extremely sensitive and tender, I only made one incision at a time with the urethral perforator. A small gum elastic catheter was passed, and left in the bladder. This was withdrawn, and a larger size introduced on the second day. Four days from the operation the catheters were left off, and he was

treated by steel dilators. In a month a No. 10 could be passed, that size being the natural calibre of his urethra.

In this case, as in the last, impotence was produced by the stricture, and the disease was attended by the worse symptoms.

CASES OF STRICTURE PRODUCED BY EXTERNAL VIOLENCE,
PERFORATED.

STRICTURES are sometimes produced from accident. A man falls from a height, and bruises his perineum and urethra upon some foreign body below. Sailors are particularly liable to this accident; examples of which may be seen in Meljaso's and Clerk's cases. When strictures arise from this cause, they are generally of a much severer character than when produced from causes which merely proceed from the urethra itself. This may be accounted for, not only from the urethra being injured, but from the parts surrounding it suffering likewise. Hence a consolidated indurated mass is formed around the canal, in addition to its own contraction and change of structure. The following cases are of the description I have just mentioned:—

CASE XXVIII.

*Stricture produced from falling from a great height,
perforated.*

Mathias Meljaso, a sailor, with an impermeable stricture, of twenty-seven years' standing. In the year 1800 he fell through the hatchway of a ship, and struck his perineum against some broken casks which were at the bottom of the vessel. After recovering from the temporary shock which the blow occasioned, he felt an uneasiness while his urine passed through the urethra; but not finding any particular inconvenience from it, he made no complaint until 1815. At this period he was at least twenty minutes or half an hour in expelling the contents of his bladder. He then applied to a surgeon, who endeavoured, at various times, to pass a bougie for him; but he was always frustrated in the attempt, being unable to get it farther than the stricture. In this miserable condition the poor fellow remained until 1826, when he was seized with retention of urine. On his recovery from this attack, the surgeon who attended him employed caustic bougies, with the view of destroying the stricture. Instead of this, however, (which so frequently happens,) a false

passage was made by the employment of this remedy.

On Sept. 1827, he was admitted into St. Bartholomew's Hospital; and the present state of his urethra is as follows:—There is an impermeable stricture five inches and a half along the canal, and about half an inch anterior to it a false passage is formed, at least an inch in length. On passing the bougie to the contracted part, which is difficult on account of the false passage, it causes considerable pain, and on withdrawing it it is always followed by a flow of blood. He suffers much pain while making water: it flows only by drops, and he is nearly an hour in voiding it.

Oct. 29th.—The armed stilette was used, and one inch of the stricture was divided. He did not feel more pain, nor was there more hæmorrhage, than when a common bougie was passed. On the following day a metallic bougie was passed to the strictured part, when, with slight pressure, a band appeared to give way in the urethra, and the bougie (No. 9) slid gradually into the bladder. On the following day he had suffered no inconvenience; the bougie passed with ease, and he could

make water in a good-sized stream, which he had not done before since the year 1800. As no constitutional symptoms arose, no particular treatment was necessary: a catheter, therefore, from this period, was passed every day, and its size gradually increased. At present (Nov. 20th) a No. 12 can be introduced with the greatest ease, the stricture has disappeared, and his health is quite restored.

CASE XXIX.

Stricture arising from external violence, perforated.

DECEMBER 26th, 1827.—John King, ætat. thirty.

The history he gives of himself is as follows: that, having been a post-boy, and ridden a great deal, he had frequently struck his perineum and penis against the pommel of the saddle, from which he attributes the origin of his stricture. About a year previous to the present time he was a patient in St. Bartholomew's Hospital for this disease; and he was then relieved by the urethra having ulcerated behind the stricture, and thus a new passage for the urine, anterior to the testes, was formed. He then discharged himself from the

hospital, and has made water by this channel ever since. This he accomplishes, however, with great difficulty, as he is obliged to pass a straw through the false passage every time he voids his urine, to facilitate its escape. Upon examination, an impermeable stricture was found three inches from the orifice, which extended to the length of two inches along the urethra, feeling at that part just as if a hardened cord had been placed there. I passed a small catheter through the fistulous opening into the bladder, which entered the urethra five inches from the orifice. I then introduced the armed catheter, and by degrees divided the stricture until I arrived at the catheter, which was introduced through the false passage. Both the catheters were then withdrawn, and an elastic gum one passed into the bladder. The presence of this, however, kept up bleeding from the urethra; it was therefore withdrawn, and the hæmorrhage immediately ceased. On the evening of the same day I saw him again. He had suffered no pain, excepting at the time the urine had made its escape through the divided portion, which it had done partially. On the following morning he left the hospital, assigning as a reason that he had some particular

business to transact. He had slept well during the night. He never returned; so that the termination of the case cannot be known. It is probable, however, the stricture having been divided, had he stayed he would have been completely cured.

CASE XXX.

Stricture from external violence, perforated.

A COURIER, who had been in the constant habit of riding, had so bruised his perineum against the pommel of the saddle, that from two to three inches of his urethra had become irregularly thickened, and impermeable to the passage of the bougie. I introduced the lancetted stilette down to the part, and from time to time divided portions of it until I completely perforated it; I then passed both silver and steel bougies through it, until the hardened substance of which it was composed was absorbed. In six weeks he was quite free from stricture, and could make water naturally.

CASE XXXI.

Stricture arising from an accident, perforated.

THOMAS CLERK, æt. 32, was admitted into the St. Marylebone Infirmary, 8th January,

1833, with a stricture of the urethra. He states that he received a hurt in August, 1831, on board a ship, by missing his hold of a rope, when he fell with the whole weight of his body upon the edge of a bucket which was on the deck, and which struck him between the legs, on the perineum. He bled very much at the time, and for some time afterwards, from the urethra, and only a few drops of urine occasionally escaped. He remained in this state for three days, when total retention came on. The usual means were employed, but with no effect, and a catheter was attempted to be passed, but it could not be got into the bladder. He had had complete retention for forty hours, when, having taken a dose of castor oil, he was seized with violent vomiting, and during the effort of straining made at the time, a large quantity of coagulated blood was forced out of the urethra. He now was able to void a few drops of urine, and he had an inclination to do so every ten minutes. From this time he gradually got better, until he could make water in a very small stream, but he found himself much reduced. He continued in this state for about a month, when he consulted an eminent surgeon, under whose care he remained for two

months, but no instrument could be introduced through the stricture into the bladder. He gradually got worse, and became so weak and thin as almost to resemble a skeleton. Incontinence of urine came on, and he had no power over the bladder night nor day. The pain he suffered was so excessive that his mind became affected, and he lost his reason. He now was sent to the sea. His intellect and general health improved, but the stricture remained the same. On his return to London he took quinine, and bougies were passed for him, but they could not be introduced into the bladder. He went to the sea again, and bathed, but derived no benefit. The incontinence of urine increased, and his sufferings were very great, having constant irritation in the urethra, and great pain in the loins and hips. In this miserable state, by the advice of Mr. Salmon, he came to me, and he got himself admitted into the St. Marylebone Infirmary, under my care.

When I saw him, nothing could be more wretched than his condition. He was extremely emaciated; he had a distressed and anxious countenance; his spirits were depressed to the utmost degree; he was feeble

and tremulous; his urine escaped from him drop by drop, into a little leather bucket attached to the penis; his person was offensive both to himself and those around him, from a urinous foetor; he had no appetite, and his pulse was quick and irritable. The bladder was tender on pressure, and the urine deposited a muco-purulent secretion. On examining his urethra, I found a stricture situated five inches down the canal, which gave the sensation, when pressed upon, as if the point of the bougie rested against an indurated solid mass.

Jan. 12th.—The urethral perforator was passed down to the obstruction, and the blade of the lancet was thrust out at its point. About half an inch of the stricture was permeated. Only a few drops of blood followed the incisions, and no pain was given. A bougie was passed every day, by which the divided part was kept open.

18th.—The instrument was again employed, and nearly half an inch more of the stricture permeated. The same treatment was followed.

24th.—On this day the obstruction was

completely perforated, and a catheter passed into the bladder. During the whole operation, at each time it was performed, it required considerable force to penetrate the indurated stricture. But little pain was given, and no bleeding of any moment resulted.

A catheter was left in the bladder for four days, but he could not bear it longer. Steel dilators were then passed every other day; and when the stricture had entirely disappeared he was discharged from the hospital.

The general treatment of this case was strictly antiphlogistic. Leeches were frequently applied to the region of the bladder: aperients, opiates, and emollients, were administered as the symptoms required them; and when the inflammation had subsided, tonics were taken with great advantage.

The distressing state to which this poor fellow was reduced was deplorable. The only treatment which could have been adopted for him, excepting perforation, was division of the stricture from the perineum; but it is doubtful whether, in the enfeebled state in which he was, he could have borne so severe

an operation. It is most probable, from the great hæmorrhage that ensued after the accident, that the urethra was ruptured.

HÆMORRHAGIC STRICTURE.

THE following cases are examples of what I have termed Hæmorrhagic Stricture, and which I have alluded to before at page 7:—

CASE XXXII.

Hæmorrhagic Stricture perforated.

A naval officer, ætat. 60, consulted me in Aug. 1830, under the following circumstances:—He had been the subject for many years of an impermeable stricture, situated immediately behind the bulb, at the entrance of the membranous portion of the urethra. He had placed himself under the care of various surgeons of eminence, who had tried all the known means, excepting external division, without success. As a last resource, and as otherwise he must have refused a valuable naval appointment, he was desirous of having the stricture divided by the lancetted stilette. The case was by no means a favourable one

for the operation ; for after each introduction of the bougie, hæmorrhage, to the amount of from half a pint to a pint, always occurred. Having had, however, another case very similar to it, where the bleeding ceased immediately after the incision, I consented to operate, more particularly as his nephew, who was a surgeon, was to be present. On the first day about half an inch of the obstruction was divided, and the hæmorrhage certainly was less than when a simple bougie was passed. On the sixth day from the first incision I introduced the instrument, and made another, when it slipped on with the greatest ease into the bladder : but little blood followed. A No. 9 catheter was now passed on the alternate days. Six days after the operation he was attacked with a continued fever, which he had been liable to before, in consequence of living on the banks of the Thames. He was removed from that situation, but the fever ran on for a month. During this period I did not attempt to pass instruments, but the stream of urine was all the time nearly as large as natural. When he was convalescent I introduced a bougie, but I could not, in consequence of spasm, get it into the bladder. He was recommended, therefore, to go into the

country to recover his health, and he paid a visit to his brother-in-law, who was a surgeon. After a little time he improved so greatly that this gentleman twice passed a No. 9 catheter. Having accepted the naval appointment, and his time being expired, he sailed for Jamaica. Since his arrival I have heard from him. He makes water freely, and can pass a No. 9 catheter with ease.

This case is also one of great interest, for, independently of every remedy being employed without effect, excepting external division, it shows, even where the stricture is disposed to be hæmorrhagic, that an incision into it rather diminishes than increases this tendency. The same happened in a case which came under my care before. When a bougie touched the stricture, the hæmorrhage was terrific; but immediately after the part was divided, it ceased altogether. I shall not attempt to offer an explanation of this phenomenon. It is possible that the strictured part is of that vascular nature, that the least abrasion of its surface, as in some hæmorrhagic ulcers, makes it bleed. A clean incision, however, through it, allows the mouths of the vessels to contract, and thus hæmorrhage is prevented.

CASE XXXIII.

Hæmorrhagic Stricture perforated.

MARCH 1833.—Captain S., æt. 35, was invalided from India, in consequence of bad health brought on from a stricture of the urethra. He was within six months of the expiration of his leave of absence, when he called upon me, stating that he had tried, since his return to England, all the usual means for the cure of that disease, but he could never obtain any relief. His urine only flowed from him drop by drop; and he suffered such great irritation from the bladder, and a constant desire to make water, that he could get but little sleep at night. I found, on examination, a stricture just at the entrance into the membranous portion, which was of so vascular a character that the moment it was touched it burst out bleeding, and never ceased until several ounces were lost. Although the case appeared unfavourable on this account for the operation of perforation, yet from the previous experience I had had, that a clean incision into the stricture of this character caused the hæmorrhage to cease rather than to increase it, I recommended the treatment. Leeches

were applied once or twice to the perineum, when the perforation was attempted. After employing the urethral perforator three different times, the stricture was at length permeated, and at each time the blood lost was very trifling. The obstruction occupied nearly an inch. Bougies and steel dilators were now passed, at first every, and afterwards every other day, until the strictured part was as large as the rest of the canal, and it would have been impossible to have told where the obstruction had existed. In this case the bladder had partially lost its power, and could not expel the whole of its contents, leaving eight ounces, and sometimes more, of urine behind. A catheter, therefore, was passed night and morning, to draw off the residue, and steel and other tonic medicines administered. From this treatment the bladder gradually gained its power; and in about three months the patient was quite well, and enabled to return to India

There are two points of interest in this case:—1st, the hæmorrhagic character of the stricture; 2ndly, the partial paralysis of the bladder, after the stricture was cured.

I have seen several cases of what may be

called the *hæmorrhagic stricture*; and it appears to arise from the great vascularity of the substance of the obstruction itself; that is to say, the diseased structure which forms the stricture resembles in some measure that of the bleeding pile. I have had only in one instance an opportunity of examining the urethra in this description of stricture, and that was in a case which will presently be related. In this, the nipple-like projection, from whence the bleeding came, was of a highly vascular character. The fact of a clean incision into a stricture producing no bleeding, while the passing a simple bougie caused great hæmorrhage, may be accounted for by the cut mouths of the vessels contracting, in the former, and in the latter by an erosion of their surface.

Partial paralysis of the bladder, after a stricture has existed for many years, is not an uncommon occurrence. At first the muscular coat becomes thickened, and the urine is expelled with greater force than natural; but when the stricture has become so close as only to allow the urine to pass through it drop by drop, the bladder frequently, and from time to time, becomes distended and stretched beyond its normal size. The patient likewise cannot,

from the same cause, make a sufficient effort to expel the whole of its contents at one time: a certain quantity of urine, therefore, is always left in it, and consequently the bladder only contracts as far as the fluid contained in it will allow; and thus a habit is formed by which the muscular power is weakened, and partially lost.

CASE XXXIV.

*Hæmorrhagic Stricture, &c.—The case of Admiral Sir Herbert Sawyer, K.C.B.**

ABOUT seventeen years from the present time (Nov. 1833), Sir Herbert, who is now 70 years of age, met with the following accident:—He was driving his family to pay a visit to a friend, when, having occasion to get off from the box of his carriage, his foot slipped, and he fell with the whole weight of his body on the circle of the wheel, upon his perineum. The shock was very considerable, and he suffered excessive pain. A few minutes afterwards he felt that his drawers and boots were filled with what he considered to be urine, but on examination he found it to be blood, flowing from the urethra. He was immediately placed in

* The name of this patient was mentioned at the request of the family.

the carriage, and driven as fast as possible to his friend's house. On arriving there he was much exhausted, having lost an immense quantity of blood. The family surgeon was sent for, who immediately employed remedies to arrest the hæmorrhage. It continued, however, more or less, for four days, when it ceased entirely. The patient of course was much reduced, and his urine passed away during the whole time with the most excruciating agony.

About a month from the accident, Mr. Cline was sent for, who endeavoured to pass instruments into the bladder, but failed in the attempt. From this time, as the urine continued to pass tolerably free, nothing more was done until a year or two afterwards, when Sir Everard Home was consulted. Sir Everard tried to pass instruments, but he could not succeed. He then employed the caustic, but without effect. Since that period most of the eminent surgeons of the present day have been consulted, but none could accomplish the introduction of an instrument into the bladder.

Although the stream of urine has never been since the accident as large as natural, yet the obstruction of the urethra has not caused *extreme* suffering until within the last two or three

years. Since this time Sir Herbert has had constant incontinence of urine, with frequent attacks of complete retention, which produced such distention of the bladder that it occupied the whole region of the pubes, and reached as high as the umbilicus; hence, had not relief been obtained, the bladder must have been punctured. The urine, for more than the last two years, has continually drained from the urethra only drop by drop, into a receptacle attached to the thigh, made for that purpose. From the difficulty of keeping this machine in its proper position, and from a constant spasmodic pain at the neck of the bladder, he is unable to remain longer than three or four hours together in bed, and when there, he seldom got any sleep; he was therefore under the necessity of sleeping in a chair, or in any position most convenient, for more than half the night. This state of suffering, day after day, and night after night, for so long a period, had so worn him, that he became enfeebled, depressed in spirits, restless, and constantly drowsy. In such a miserable state of existence life could be but of little value to him; and had it not been for his fortitude, his great resignation of mind, and the placidness of his

temper, he must long ago have sunk under so heavy an affliction.

On the 11th of last September, 1833, I received a letter from him, requesting me to go to Bath to give my opinion on his case. On my arrival there, I found him much in the state already described, excepting that in addition he had an extremely irregular pulse, intermitting every second, third, or fourth beat; and he had also anasarca of the lower extremities. He informed me, likewise, that he had had dropsy three or four years ago, and that fluid had collected in all the cavities, so much so that he was obliged to be propped up in bed; from this he recovered, under the care of Dr. Blackall, of Exeter. Cataracts, also, had formed in both eyes, which a year previous had been successfully extracted by Mr. Alexander.

In consultation with Mr. Norman, of Bath, I examined the urethra, and found, as every other surgeon had done before me, that a bougie or catheter could not be passed further than the bulb. At that part its progress was arrested, and it appeared as if its point rested

against a solid mass, which, by pressure, could be forced on before it. An attempt was made to take a cast of the part, by moulding soft wax on the point of a bougie, but no impression could be obtained. It seemed to enter a blind pouch, whose extremity was perfectly smooth. Under such circumstances, both Mr. Norman and myself agreed that it would be better to attempt to perforate the stricture; for it was too evident, from the symptoms under which Sir H. laboured, and the worn-out condition in which he was, that the first attack of retention of urine he again had, would either cause his death, or render it necessary to puncture the bladder, which, in his enfeebled state, he could but ill bear. As the operation of perforation of stricture had never been in a single case, under my own care, attended with the slightest injury, he consented to have it performed; and I gave it as my opinion, in which Mr. Norman concurred, that from the length of time the disease had existed, from its having been produced by an accident, and from its solid cartilaginous feel, it might require several applications of the instrument before the perforation could be accomplished. He was therefore recommended to go to London, to place himself under my care. This, however,

he would not consent to, having an extreme aversion to leave his home. He requested me, therefore, to visit him at Bath once in ten days, or as often as required.

On the following day after the examination, the first attempt was made to perforate the stricture, and half an inch appeared to be gained. The solid mass, however, on pressing the point of the instrument against it, went on before it, which made it impossible to tell how much the lancet had penetrated. About two ounces of blood were lost; but the pain was not so severe as might have been expected. On the following day the urethra appeared to be much as usual. I left Bath the same night: bougies were to be passed every day until my return.

On my return to Bath, I found our patient much as usual, having taken his customary exercise, and having lived in the same manner as he was accustomed to do, except being, perhaps, a little more careful in diet. The bougies had been passed, but they caused so profuse a hæmorrhage that Mr. Norman very judiciously left off introducing them. The blood lost was very considerable each time. The

point of the bougie appeared to touch some structure in the urethra, which instantly bled. This was exemplified on passing more than one bougie. The first, perhaps, would cause no bleeding at all, whilst the second, the moment it touched the part, appeared as if it had wounded a large vessel. The blood instantly gushed forth from the urethra in a large stream, and continued bleeding, the stream gradually diminishing, until half a pint or more was lost. The excrescence through which the urine passed (as seen in the plate) was of a very vascular character; and it is most probable that the point of the bougie sometimes touched it, and sometimes not. When it did, hæmorrhage was the result.

The lancetted stilette was again used, and it was found we had kept the ground we had already gained; but the hæmorrhage was so great that the lancet was only thrust out twice or three times. We were therefore obliged to desist, and we agreed to leave the urethra alone for a fortnight, until I next saw Sir Herbert. As before, no inconvenience arose from using the instrument. The pain was trifling, and from an hour afterwards but little was felt.

In rather more than a fortnight I again endeavoured to perforate the stricture, and at this time there was no bleeding whatever. We appeared to make considerable progress, and to have nearly arrived at the prostate gland; but still the point of the instrument pressed against a solid mass. We made every effort possible to get into the bladder, but could not succeed; we therefore thought it most prudent to desist for the present, being aware that we were probably deceived, in consequence of the solid mass being pressed on before the point of the instrument. No mischief resulted.

In ten days more I again went to Bath, and found Sir Herbert in particularly good spirits. He had taken his customary exercise, lived as usual, and he fancied he made water better; indeed, but from what circumstance I cannot say, he certainly did. On the next day we resumed the attempt to perforate the stricture, and, as before, we appeared to make progress. We did all we could to steady, or rather to fix the part, in order to prevent it receding from the instrument, and we felt that we were all but in the bladder. The instrument was in an exact line with the course of

the urethra ; and it was full eight inches in the urethra, but we could not get it farther ; and the lancet seemed to have no effect when thrust forward. We passed another instrument, much smaller than the other, but without making any impression ; it was withdrawn, and a small elastic gum catheter passed, thinking it possible the stricture might be perforated, but that the blunt point would not follow a simple incision. It unfortunately happened, however, that the point of the catheter touched the hæmorrhagic excrescence. It immediately burst out bleeding, and so profusely that we were compelled to give up any further attempt, fearing, if such hæmorrhage continued, that the patient, circumstanced as he was, of a great age, being enfeebled, and having a disease of the heart, might die from the loss of blood ; we therefore, with the greatest reluctance, were necessitated to do no more. We consulted together whether it was advisable to make any further attempt on a future occasion, feeling that possibly some peculiar alteration of parts might have taken place from the original accident. We came to the determination of waiting until the following day, to see the result of the operation. On the next day no ill consequences ensued ; the urine passed

as freely as before, and but little pain was felt in the urethra. Sir Herbert still felt sanguine that we should ultimately accomplish our object ; and being aware from the opinion we had at first given, that it was not to be expected we could perforate so solid a mass, the extent of which it was impossible to know, under several operations, he consented to have another trial made. It was therefore decided to defer making another attempt for a month, and in the meantime to pass a soft wax bougie every fourth or fifth day, to keep the ground we had already gained.

In a week from the time of my return to London, I received a letter from Sir Herbert, from which the following is an extract :—

“ I felt the effects of your last operation more acutely, and for a longer period, than any of the preceding, and therefore withheld any further attempt till this morning ; when Mr. Norman has passed a bougie (such as you directed), without my suffering very much pain, a full inch further than it was accustomed to go before your first operation. He allowed it to remain there some little time, and then, endeavouring to press it a little far-

ther, it bent, and there was a very slight tinge of blood, hardly worth mentioning; but he thought it prudent not to persevere, and proposes to make another attempt on Saturday, of which you shall know the result, should it be worth postage; if not, I shall not write again until Tuesday—on the day of the next effort. With respect to the passage of water, I cannot say it is improved or otherwise, but much as you saw it. My general state is sadly nervous, which is not to be wondered at, with such a weight on my mind; though I avail myself of this favourable weather, and get a comfortable walk most days.”

I was gratified at this account, because it shewed how well our patient was going on. It was not to be wondered at that he should have suffered more from the last operation, because more was done, and a greater effort was made to perforate the stricture; but the little pain the passage of the bougie afterwards gave, and its producing only a *tinge* of blood, proves there could be no inflammation at the strictured part. The bougie also passing “a full inch further than it was accustomed to go before the first operation,” gave every encouragement for us to continue the treatment. It

was natural, likewise, that Sir Herbert should feel nervous, when we consider the duration of the disease, the painfulness of its nature, the sleepless nights, the incontinence of urine, and the constant dread of retention. His being able, however, to follow his usual pursuits—such as walking, &c.—proved that his general health was not materially affected.

I did not receive a letter on the Saturday, so I concluded all was going on well. On Tuesday the following account arrived. He says,

“ I have little to report of our proceedings to-day. Mr. Norman passed three different sized bougies ; one (the second) bent at about the end, as it did with you ; the last, which was of a large size, went on certainly full as far as ever we have gone yet ; a proof the new passage is enlarged to that extent. The whole operation, however, was attended with very considerable pain, though it produced no blood ; and I ascribe it, in some measure, to the extreme coldness of the weather, for cold affects my whole frame much. We propose now to wait till Thursday ere we make another effort, unless Wednesday should be milder,

and I feel less nervous than to-day. If we are not doing a little good, we are at least keeping all as it was ; so trust the delay cannot be injurious, and even, indeed, may be beneficial."

I was not surprised to hear that Sir Herbert suffered from the severity of the cold weather, for the thermometer, at that time, was lower than it had been during the whole winter. He had informed me before that he only dreaded the cold weather, fearing that it might bring on (as it had often done) a spasmodic affection of the bladder, and retention of urine. On November 8th I received the following account from Mr. Norman :—

" Our patient, Sir Herbert Sawyer, has not been so well. He wrote to you of my having passed the bougie three times, and each time it went certainly an inch into the new passage which had been made ; it gave no pain, and there was no bleeding and no irritation after. This was the case on Monday, which was the last time it was passed ; but on Tuesday he became feverish, had pain about the rectum, and the next day there was a good deal of spasm and effort in passing his urine ; still it

did pass, and has continued to do so; but the bladder certainly is never quite emptied. He is much worn by this, and his pulse is very irregular. I have no doubt this will get better, but of course it will not be possible to use the bougie, or to do any thing with instruments for the present. He wished me to let you know this, and I was also desirous you should know his present state. I will write to you again about him in a day or two."

From this statement I did not apprehend that much serious mischief was going on; neither, as it may be seen, did Mr. Norman. It appeared to me that he had one of his usual attacks, in a slight degree, of spasm of the bladder, and that this was brought on, according to his own account, from the severity of the weather, and that it would most probably go off in a day or two. When the bougie passed, it produced no pain, and there was no irritation afterwards; neither was there any bleeding: thus proving that there could not have been much inflammation at the strictured part, particularly as the urine continued to flow through it.

The next letter I received from Mr. Nor-

man, which was three weeks from the time I last saw him, and a week after the passage of the last bougie, he informed me, very much to my sorrow, that Sir Herbert had gradually got worse, until he became insensible, and that he had been obliged to puncture the bladder. I immediately took a place in the mail, and went down to Bath the same evening. On my arrival there on the following morning, I called upon Mr. Norman as soon as possible, who informed me that I should most probably find Sir Herbert dead. Every means that could be thought of had been adopted for the relief of the patient, but without effect. On going to the house, I found that he still lived, and he was in much the same state as described by Mr. N., excepting that, during the night, a consciousness had occasionally returned, and he knew his daughter, and some of the people about him: his breathing, however, was heavy, almost amounting to stertor, and his pulse even more irregular than common, although it had some power in it. The pupil was dilated. If roused, he would answer; but he immediately fell into a comatose state, or would continue a low muttering to himself. I examined the perineum, but there was no swelling nor tenderness.

Mr. Norman and myself consulted together, and employed every means in our power; but, in spite of all remedies, he only lingered on until the following day, and then died.

Examination of the body twenty-two hours after death—The abdominal muscles were first dissected, to examine the opening which had been made by the operation of puncturing the bladder above the pubes. There was a little extravasated blood between the fibres of the muscles. The parts about the opening appeared to have been slightly inflamed, but there was no appearance of suppuration, nor evidence of extravasated urine.

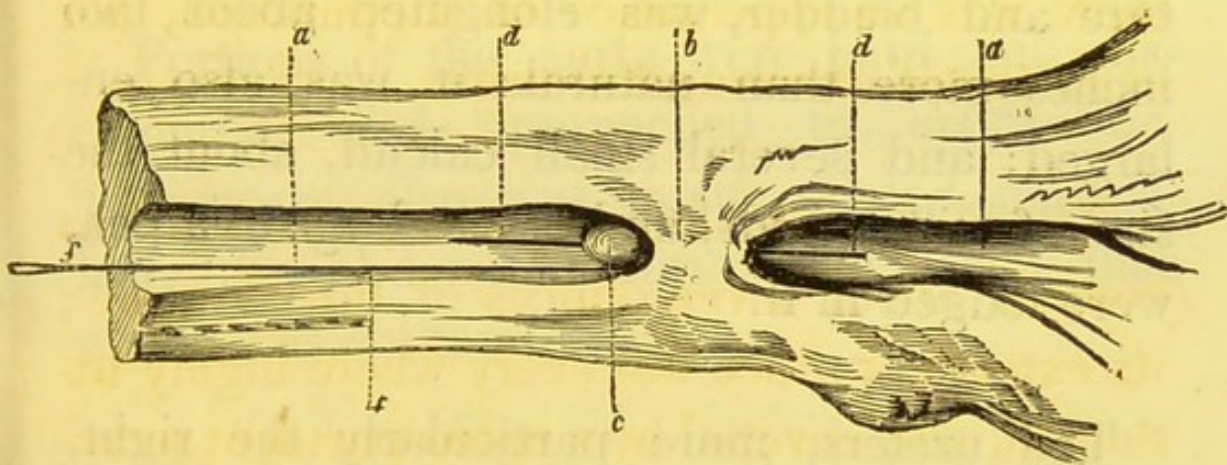
The bladder, on being opened, was found to contain about seven ounces of turbid urine; its external surface was every where highly inflamed, and covered by a muco-purulent secretion and calcareous matter: its walls were about twice the natural thickness, and its whole volume also was twice or three times larger than natural.

The prostate gland was slightly enlarged, but not more than usual in old people; and

the third or middle lobe was not increased in size.

The urethra was full eleven inches in length ; it was not inflamed nor ulcerated. There was no swelling nor formation of matter, nor extravasation of urine into the perineum.

There was a stricture commencing an inch anterior to the bulb, which occupied more than an inch of the canal : it was of a very tough consistence ; and at the extremity of it, nearest the external orifice of the urethra,



a, the urethra.—*b*, the stricture.—*c*, the excrescence through which the urine passed.—*d*, the bristle introduced through the centre of the excrescence.—*f*, a probe introduced into the newly-made canal.

there was a nipple-like substance projecting into the canal, resembling the glans penis of an infant, or the uvula, through the centre of which there was a small canal, which could only admit through it a bristle, and through

which alone the urine could pass. This excrescence was of a highly vascular structure. On the lower side of this projection there was a newly-made canal, about one-fourth of an inch in length, which terminated in a blind extremity, and which blind extremity was about three-fourths of an inch from coming out into the urethra, on the other side of the stricture*. This no doubt was produced by the perforation of the lancetted stilette, or urethral perforator.

That part of the urethra, between the stricture and bladder, was elongated about two inches more than natural: it was also enlarged; and several small calculi, about the size of millet-seeds, and one as large as a pea, were lodged in it.

The ureters, more particularly the right, were much enlarged, and contained urine.

The pelvis of each kidney, also, more particularly the right, was extremely large, and so thin as to resemble bladder; each of them con-

* The preparation is in the Museum of the Bath Hospital.

tained some concretions of lithic acid. The cortical substance of both was very pale, thin, and wasted, being not more than half an inch in thickness. There were some small serous cysts on their surface.

The lungs were perfect.

The heart was greatly diseased, the left ventricle being irregularly hypertrophied or thickened. The right ventricle was considerably dilated. The mitral valve was thickened, and some part approached to ossification.

Portions of the aorta were hard and discoloured, and approached to ossification. This artery, also, was greatly dilated, particularly the abdominal aorta. The right iliac artery was obliterated.

The brain and the arachnoid membrane were generally inflamed, and some parts of it were opaque. The substance of the brain was vascular, being studded by the bloody points of enlarged blood-vessels. The ventricles contained serum.

The stomach, intestines, and liver, were

healthy. Most of the arteries of the lower extremities were ossified.

The whole history of this case, taking it from its commencement to its termination, is extremely interesting. The stricture being produced from an accident, the continuance of the hæmorrhage for so long a time afterwards, and the impossibility of ever introducing any urethral instrument into the bladder, are all points of interest. It is not an unusual occurrence to find stricture brought on from an accident such as Sir Herbert met with. Sailors, for instance, as in Thomas Clerk's case, fall from the rigging of a vessel, and strike the perineum against any projecting body on deck. Those who ride much are liable to the same accident: they are constantly battering the perineum against the saddle, or by some sudden jirk are thrown against the pommel, and thus, from the inflammation produced in consequence, give origin to the disease. I have observed that this kind of stricture is generally of a much worse description than those brought on from gonorrhœa, or from any other cause; and I attribute it, not only to the coat of the urethra itself being altered in struc-

ture, but also to the parts external to it becoming indurated and consolidated.

The hæmorrhage having continued so long after the accident, shews either that some vessel in the urethra was ruptured, or that the canal itself was torn. Such an occurrence, after so much violence, and so great a shock having been received at the part, might naturally have been expected. It may be observed that the same happened in Clerk's case; the hæmorrhage from the urethra continued for three days afterwards. The impossibility of passing a bougie into the bladder at any time after the accident is remarkable. In the early stage of the disease this circumstance cannot be easily accounted for, unless the accident produced some transposition of parts; but in the latter stage there can be no difficulty in explaining it. The dissection of the urethra proves that the introduction of any urethral instrument would have been impracticable, if not impossible.

The immediate cause of death in this case no doubt arose from serous apoplexy, brought on by the irritation and pain produced by the recent inflammation of the bladder, and the

long and continued irritation of the urinary organs generally, for so many years. Serous apoplexy is one of the commonest terminations of disease of the urethra and bladder, and particularly when it has been of long duration, and when the individuals who are the subjects of it are of a great age. The sufferings of patients thus situated, are so great, so painful, so constant, so harassing, that their life is gradually worn out. Both by night and by day they are in constant distress; they cannot, perhaps, void their urine in any other manner than by drops; they have a frequent inclination to do so, without being able to empty the bladder; it passes probably involuntarily from them; they are obliged to rise up from their bed every quarter or half hour, to attempt to relieve themselves; their rest is broken, and just as they have fallen asleep they are probably awoke again, from the distressing desire to make water. In short, their whole occupation is in attempting to relieve themselves of the urgency of the symptoms of their complaint. In this dreadful state of anxiety and misery they continue, until they become enfeebled and exhausted. The brain at length sympathizes with the pain and irritation of the urinary organs; urinary coma, as it

is termed, comes on; water is formed in the ventricles, and serous apoplexy is the result.

On reading the account of the post-mortem examination of the body in this case, we can only feel surprised that Sir H., with so much disease of organs so intimately connected with the functions of life, should have lived so long. Independently of the disease of the urethra, which of itself was sufficient, by the constant and harassing pains, and the long and continued suffering it had occasioned, to cause death, we may observe the following morbid changes had taken place.

The bladder was in a high state of inflammation, being three or four times more capacious than usual, and from old disease its coats were twice the natural thickness; calcareous matter was deposited on its inner surface, and its whole appearance evidently bore marks of long and continued disease. The ureters and kidneys were much diseased, the former being considerably dilated, and the substance of the latter being almost entirely obliterated, the cortical part being not more than half an inch in thickness, and the pelvis being so enlarged and thin as rather to resem-

ble bladder than its natural structure. The brain had suffered both from the previous and recent disease. The arachnoid membrane was in many parts opaque and thickened, and in others inflamed. The substance of the brain was studded by the bloody points of enlarged blood-vessels, and the ventricles contained serum. The heart was enlarged, the left ventricle being generally, but irregularly, hypertrophied, some parts of it being thicker than others, and the right ventricle dilated. The valves of the aorta were ossified, and the aorta itself, throughout its whole course, but more particularly in the abdomen, was dilated to nearly twice its natural size. Almost all the arteries of the body also were ossified, and some were obliterated. It is needless to say that such a state of the heart and arteries might at any time have been productive of sudden death. Besides these, there were other morbid changes, of a minor description, in various parts of the body.

It will be clearly seen that no mischief arose from the operation. There was no inflammation at the strictured part—no ulceration—no formation of pus—and no extravasation of urine into the perineum. In fact, excepting

the stricture itself, the urethra was perfectly healthy.

This description of stricture is perhaps unique: the nipple-like projection, through which only a bristle could be introduced, and through which alone the urine could pass, being so regularly formed and resembling the glans penis of an infant, or the uvula, is a morbid change which I have never before witnessed in the urethra; nor have I met with any one, however experienced he may have been in morbid anatomy, who has. How to account for its formation would be difficult; whether it was a congenital formation, like *nævus*—whether it was caused from the accident—or whether, from the extreme closeness of the stricture, the sides of the contracted part were, by the pressure of the urine, gradually forced forward, and thus the projection was formed, it would be difficult to determine. The manner in which it projected into the centre of the canal, however, and the peculiarity of its formation, was such, that it rendered the obstructed part totally impervious to any instrument. We cannot be surprised, therefore, at the failure of surgeons of such eminence, who had attended Sir Herbert, in passing a bougie

or catheter into the bladder. The treatment which was adopted appears to be the only one which offered the slightest chance of relief; and it is only to be regretted that it had not been sooner attempted, when the patient had not been at so advanced a period of life, and so enfeebled and worn out by the disease.

CASES WHERE MORE THAN ONE STRICTURE IN THE SAME URETHRA HAS BEEN PERFORATED AND DIVIDED.

IT often happens that there is more than one stricture in the same urethra;—sometimes two, three, four, or even more; insomuch that the whole course of the canal may be said to be diseased. It is most probable that such a state of the urethra is owing to the inflammation which gave origin to the contractions having occupied a greater extent of surface of the membrane than common. Another origin, however, for more strictures than one in the same urethra, is, I am convinced, from a contraction having formed in the anterior part of the canal, within two or three inches from the orifice, or at the orifice itself. In such cases the urine in micturition is held back, and a portion of it remains in the canal.

Hence a constant irritation is kept up, most probably producing in the posterior portion new disease. Besides this, there is a sympathy between the anterior and posterior parts of the canal, which may give rise to this tendency.

CASE XXXV.

Four Strictures perforated and divided.

THOMAS FACEY, ætat. forty-three, admitted into St. Mary-le-bone Infirmary November 6, 1828. The state of this man's urethra is as follows:—He has a hardened contraction of the orifice, and another of about half an inch in length an inch further on. Four inches from the orifice there is a permanent stricture, and also at the bulb; the urethra is quite impermeable. He states that he has been strictured for about twenty years; that eight years ago he was admitted into the London Hospital, and other public institutions, and that from each he was discharged incurable. Since this he has suffered the worst symptoms that this disease inflicts, without being able to get any relief; and at present he is reduced to the greatest degree of emaciation and debility, making water only by drops, constantly and involuntarily.

On November 10th I enlarged the orifice to its natural size, and divided the second stricture. A bougie was left in the urethra, to keep the parts from closing; and leeches were applied on the perineum, with a view to prevent inflammation. In a few days from this time the divided parts had healed; and I found that the smallest bougie would pass through the fourth stricture, which before had been impermeable. This was withdrawn; and, on endeavouring to pass the catheter through which the wire is introduced, it was impracticable. For this reason, and from the exhausted state of the patient, who was hardly equal so soon to undergo another operation, no further attempt was made until the 28th, when, with great difficulty, it was at length introduced into the bladder. With the assistance of my friend Mr. Leech I immediately operated, over the wire, with the double stilette, upon the third stricture, about half an inch in extent; and also divided the fourth stricture, at the bulb and membranous portion, more than one inch in length. Not so much as a table-spoonful of blood was lost, and the operation lasted about two minutes. I did not attempt to pass the instrument into the bladder, but left the small catheter, used for introducing the

wire, in it. I ordered eight leeches to be applied to the perineum, with fomentations, and an opiate clyster. On the following day I found he had had a rigor during the night, but no other unfavourable symptom. The urine had made its escape not only through but on the sides of the catheter. He had no pain; I therefore let it remain, merely ordering the continuance of fomentations.

The next day he was better, and going on favourably. On December 1st, the third day from the operation, finding him quite free from pain, I withdrew the small-sized, and introduced a No. 8 catheter, which was passed into the bladder with ease, and without pain. This was also allowed to remain for a few days, when the size was gradually increased to No. 11, which appeared to be the largest which his urethra would admit. In five weeks I considered him quite cured, as he made water naturally. I passed a steel sound without difficulty for a fortnight before he was discharged.

N. B.—March 4th, 1829. About ten days ago I passed a No. 10 steel sound with the greatest ease, and he continues to make water naturally. To my surprise the sound struck

against a stone. On inquiry I found he had never had any pain, or symptoms of that disease. To-day I saw him at the Infirmary, and he produced a stone about the size of a small pea, which he had passed without pain, and he informs me that he has voided no less than six of the same description since the operation.

CASE XXXVI.

Two Strictures divided.

MARCH 1829.—M. S.—This young man was sent by a medical friend, having two strictures; one permeable, situated three inches and a half from the orifice, and the other impermeable, about six. He made water by drops, and was frequently subject to attacks of retention of urine. I divided the first stricture through its whole extent, which was about half an inch, and then ordered the usual treatment. In about a week afterwards the first stricture was nearly well, and I was able to pass a wire partially through the other. As far as the wire went I divided, which was about one-third of an inch. Immediately after the operation he made water in a good-sized stream, and at once expressed relief. In three days

afterwards, however, he came to me with retention of urine, which could arise from nothing but spasm, as I passed a No. 3 catheter with ease. This I left in the bladder; but as the urine flowed plentifully on the side of it, I withdrew it. On the following day a much larger sized catheter was passed; but as there was a great deal of spasm and irritation, I advised him to leave the urethra quiet for the present. He makes water in a natural-sized stream, which he has been unable to do for two or three years before.

CASE XXXVII.

Case of Mr. P., Surgeon, R. N.—Three Strictures divided.

MR. P., surgeon, R. N.—As this patient was a member of the profession, I requested him to take the notes of his own case, which are as follows:—

“ In March, 1807, I had the misfortune to be shipwrecked on the coast of France, on which occasion I was several hours immersed in the water, the weather being extremely cold. All the survivors were made prisoners of war the next morning, and in a few days

after we were marched off for the Depôt at Verdun, a distance of about seven hundred miles.

I had contracted a slight gonorrhœa, which was rather exasperated by the fatigue of the march, and the privations we were necessarily exposed to, and, amongst other symptoms, slight ardor urinæ was present. Arrived at our destination, rest, in the course of a few weeks, entirely freed me from all remains of unpleasant feelings. About 1812 I perceived that the stream of urine had become much smaller than natural, and I had recourse to simple dilatation by bougies, which in a few weeks restored the lost calibre of the canal. Their further use was neglected until 1815, when the urethra had gained its former small diameter. Dilatation was again resorted to, with the desired effect. The stricture, I ought to have observed, was situated about four inches from the meatus externus. I paid no attention to my complaint until 1819, when I began to give it my serious consideration, and was not a little alarmed at the probable consequences. In order effectually, as I thought, to eradicate the disease, I had recourse to the bougie armed with lunar caustic. At this

time there was a slight stricture two inches and a half from the external orifice, and a second and chief one, one inch and a half further on. To this I applied the caustic on alternate days, for a fortnight: finding it of no avail, I then applied it every day, sometimes keeping it close to the stricture for fifteen minutes at a time. This practice I continued for another fortnight, without the least destruction of stricture; indeed I scarcely could feel any thing from its application. I then left it entirely off, and returned to the plan of dilatation, which I found more effectual, as I after a time could pass a No. 6 bougie on to the bladder. After some time I neglected the bougies, but in 1821 found it necessary again to have recourse to their use. They were from this period till 1828 employed occasionally and irregularly, the strictures gradually getting narrower, and less under the command of the bougie; and when force was used, it invariably aggravated them for a couple of days after. The stream of urine was now not larger than a packthread. It happened at this time that I was exposed to considerable fatigue on horseback, and to cold and wet; and twenty-four hours afterwards I was attacked with a most severe shivering fit, which

continued for three hours, and then the hot fit succeeded, and finally a sweating stage, the whole occupying about eight hours. This was accompanied by a complete retention of urine. Next day, as well as on the third, the shivering fit returned, about the same hour as on the first, and ran the same course. General bleeding, leeches to the perineum, purgatives, hip and warm baths, enemata, and opiates, were all employed; and on the third day the urine began to come away guttatim, which in a few more improved to a very small stream. During the next two years, that is to say, to Jan. 1831, I used from time to time the smallest bougies, but at length the strictures became impermeable, and their employment made matters worse. The repeated calls to pass water in the twenty-four hours, the straining, the dribbling away of urine involuntarily, and the ever present dread of the evil consequences, rendered both mind and body truly miserable.

I heard of Mr. Stafford's new mode of treatment, and procured his work. The plan seemed so reasonable, and the results appeared so satisfactory, that I determined to put myself under his care. I accordingly came to town

on the 21st of January, 1831. On examination he found a stricture two inches from the meatus externus, admitting the smallest-sized bougie: an inch and a half further on a second presented itself, quite impermeable. The perineum was leeches, hip-bath used, and a purgative taken, preparatory to the operation.

23d.—He applied his single-lancetted stilette, cut through the first, proceeded on to the second, divided it, and carrying the instrument an inch still further on, he found a third stricture, which he in like manner divided. I had conceived the operation to be a most formidable, painful, and dangerous one; but the pain was trifling, not more than a couple of tea-spoonfuls of blood were lost, and not the slightest unpleasant consequence supervened. He then withdrew the stilette, and was able to pass a metallic bougie on to the membranous portion of the urethra, when it was arrested. To be as succinct as possible, I shall only remark, that from this date until the 4th of February I went daily to his house, a distance of a mile, to have the metallic bougie introduced; I observed regimen, and took an occasional purgative, and hip-bath; during this time the urine came away only in a small

stream, owing to the remaining stricture in the membranous portion of the urethra.

Ten days after having been operated upon, I was obliged to return to the country, from which circumstance Mr. Stafford thought it advisable to postpone a further operation till a future opportunity. I continued in the meantime to pass a No. 9 metallic bougie twice a week through the strictures already divided, down to the membranous portion, where the remaining stricture was situated. I availed myself of the earliest opportunity to come to town, and place myself again under his care. Accordingly, on the 5th of April, I waited on him. He passed a No. 8 metallic bougie at once down to the stricture in the membranous portion, when its further progress was arrested. He then tried to pass the smallest-sized silver catheter through the stricture, and after some difficulty fortunately succeeded. He at once determined on not losing such an advantage, and fixed the instrument to the penis in the usual way, so as to leave it in the bladder for some time. About a couple of hours after its introduction, feeling an inclination to pass water, I withdrew the plug, and made fully a pint, to my no small happiness.

7th.—In a couple of days the silver catheter was withdrawn, and replaced without any difficulty by a gum elastic one a size larger. No unpleasant feelings in the parts.

18th.—Urine flows only in a very small imperfect stream, whence it is concluded there is inflammation of the membranous portion, with perhaps enlargement of the prostate gland. Eighteen leeches to the perineum, hip-bath, and a purgative medicine. Urine to be drawn off twice a day.

25th.—Can pass only about four ounces of urine at a time, in a dribbling stream. The first spoonful is mixed with purulent matter, and the last spoonful brought off by the catheter is charged in like manner. Two ounces of the decoction of pereira brava have been taken thrice daily, for the last two days. Castor oil occasionally, to keep the bowels regular: appetite defective: sleep pretty well. The catheter used in the morning and before going to bed; it brings off about ten ounces of urine each time. A No. 10 metallic catheter passed into the bladder to-day.

30th.—The stream of urine not improving:

the bladder seems to be regaining a little its expulsive power, as by a continued effort only five ounces of urine remain in it. The muco-purulent sediment is a little diminished: uses the gum catheter three or four times daily, to empty the bladder. Bowels require aperient medicine every second day: appetite rather defective.

May 2nd.—Dined with a friend yesterday: was induced to take two or three glasses of wine mixed with water. Spent a most restless, feverish night, and have felt feverish and uncomfortable during the day. Took some castor oil. On passing a No. 9 metallic bougie on to the membranous portion, it caused a little pain, and on withdrawing it some hæmorrhage ensued,—a warning against such imprudence.

I can at present only pass the urine in a very small stream, and there is usually about six ounces left behind. This inability is owing in part to the feeble expulsive power of the bladder, induced by long habit of not acting efficiently, but unfortunately, in great measure, to enlargement of the third lobe of the prostate, as ascertained by examination.

There was always left behind in the bladder from eight to ten ounces of urine, after each effort to expel it in the natural way, during the first fortnight after the bougie could be used, and it deposited a considerable quantity of muco-purulent matter: for this I have taken a decoction of the pareira brava, I think with benefit: the bladder is, however, somewhat regaining its natural expulsive power, as although the urine flows in a small stream, yet by prolonging the exertion to pass it, from four to five ounces only are left behind.

But the mind being in a great measure freed from the ever present horror of retention of urine, and being now able to call in the aid of the catheter, life is rendered, under all existing disadvantages, comparatively happy.

I heard from this gentleman some time after his return into the country, and his bladder had nearly regained its power. A No. 12 catheter could be passed without difficulty.

CASE XXXVIII.

Two Strictures perforated by the Lancetted Stilette; one three inches from the orifice, and the other at the entrance into the membranous portion of the Urethra.

THE history of the early part of this case may perhaps be best described in the patient's own words :—

“ Previously to the beginning of the year 1818 I had several claps and some trifling stricture, which I have strong reason to believe were eradicated, in the early part of this year, by the use of bougies, &c. I remained well till October 1823, when I again got a clap, which was renewed in the early part of 1824, and from which I think the commencement of the stricture may perhaps be dated, as I recollect having considerable difficulty in making water in August and September, 1825. I applied to a medical gentleman at that time, from whose treatment I received considerable relief. But I believe this difficulty in voiding my water did not wholly arise from stricture, but in a considerable degree from the state of the bladder, probably occasioned by stricture, as there was a great deal of sediment or mucus in my water, and which entirely separated from

it after standing some time. Although I did not make water in a sufficient stream, yet I did not perceive myself getting much worse until the beginning of 1829, when I think I began to get gradually worse, and still kept neglecting myself, with the exception of several times (during that year and the beginning of 1830), taking something prescribed by a medical gentleman to relieve the bladder, not being aware that stricture existed to the extent which turned out to be the case. For several months previously to putting myself under your care, in October 1831, I had considerable difficulty in holding my water; in fact, I could not at all times prevent its voluntarily dribbling away. I must also observe, that for several years (say four or five), I have had cause to make water oftener than a person free from disease, and voided it in a smaller stream, and in less quantities, than ought to be the case. This propensity has also increased within the last eighteen months or two years, until it has passed only by drops.—R. B.”

When I first saw this gentleman I found him to be in a highly nervous state. He was much in the situation he has described—pass-

ing his urine guttatim, having frequent rigors, a discharge, and being almost always in pain. A stricture, impassable by a bougie, was present, three inches from the orifice, and its indurated structure could be felt externally by taking the part between the finger and thumb. After having soothed the urethra by bleeding, fomenting, and administering anodynes and aperients, the straight urethral perforator was passed to the part; and by three incisions with the lancet the stricture was divided. But little pain was felt, and only a few drops of blood followed. A small catheter was passed, with the view of leaving it in the bladder; its progress, however, was arrested at the entrance into the membranous portion. In consequence of this second stricture, steel dilators only were passed every other day through the first, until it was enlarged to the natural size of the urethra.

The patient having business in the country left town for two months. He felt himself much relieved from the first operation; and on his return the other stricture was perforated. A catheter was left in the bladder for a week, and followed up by passing steel dilators. He went into the country, having lost

all his distressing symptoms, and could void his urine in a full stream. He was desired to pass a catheter once every week for the present, and to do it as often as required afterwards.

The presence of two strictures in the urethra at so great a distance from one another, would have made the operation of their division from the perineum unadvisable; for as soon as one had been operated upon, another would have been found four inches from it; and thus it would have been necessary to have laid open at least four or five inches of the urethra. The time it would have taken to have repaired so much injury done to the canal would, of course, have been considerable, besides the uncertainty of its ultimate accomplishment. The perforation of the strictures was attended with little pain or loss of blood; but little confinement was required, and the cure was complete.

CASE XXXIX.

Three Strictures successfully perforated.

JUNE 1831.—Mr. C., æt. 53, gives the following history of his case:—When he was a

young man, about the age of one or two and twenty, he contracted a gonorrhœa, which continued for some time, and at length ended in a gleet. From this period he observed the stream of urine gradually lessened, until it became very small. He suffered considerable pain and irritation in the urethra, and at length applied to his surgeon, who examined him and found one stricture three inches from the orifice, and another seven inches: they gave way to dilatation by bougies, and he thought himself well. In a year or two afterwards, however, they returned. The same process was employed as before, and with the same result: they again returned, and he neglected them altogether. The urethra now became extremely irritable; the urine escaped only by drops, and he could get but little sleep: a despondency of mind came on, and he felt he could obtain no relief, the disease having twice returned. He came to London, and placed himself under my care, rather as an experiment than thinking he should derive any benefit from any treatment I might adopt. After having soothed the urethra, by taking blood from the perineum, fomenting, and administering anodynes and aperients, I examined him, and found he had an impassable

stricture three inches down the canal. I passed the straight lancetted stilette, and perforated it; and two inches further on there was another stricture. This I left alone till another day, fearing that I might do an injury by proceeding too far at one time. I dilated the first stricture to the natural size of the canal, and then perforated the second, and discovered another in the membranous portion. This second was dilated to the natural size of the urethra. When, however, I proposed to operate on the third stricture, the patient objected. The despondency of mind had returned, and he wished to leave town, with a view of seeing how the other operations answered. He did so, and I did not hear from him for more than a year, when he called one morning, telling me that he was so satisfied with the plan of treatment, neither of the strictures having returned, that he had come back to London on purpose to have the third stricture perforated. The operation was performed, and a catheter left in the bladder for a few days. Steel dilators were then introduced on the alternate days, until they passed with such facility that no one could have told that the urethra had been diseased.

This case is very interesting. There being three strictures, situated as they were, would have rendered the operation of their division from the perineum unadvisable. It is most probable, also, that no escharotic would have answered; besides the slowness of this method of treatment.

The return of stricture is not uncommon; indeed, by the usual treatment of this disease it generally is the case, unless bougies are constantly passed. When, however, they are divided within the urethra, they usually do not return, as in the present case, unless they are perforated by a very small instrument, and the opening made is not enlarged; they then sometimes contract to the size of the original perforation. Despondency of mind is not an infrequent symptom attendant on stricture; indeed, when the disease has been of any duration, it generally may be said to occur more or less. Such a symptom, with that of irritability of temper, cannot surprise us; at least when we take into consideration the harassing nature of the complaint.

CASE XL.

Three Strictures treated by the Lancetted Stilette, with a profuse discharge resembling Gonorrhœa.

1832.—Mr. H., a gentleman residing in Ireland, consulted me under the following circumstances. He had suffered for many years past the most distressing pain and irritation in the urethra, attended by a profuse discharge resembling gonorrhœa; he had the greatest difficulty in passing his urine, and was teased by a constant inclination to do so; he had taken every description of medicine administered in such diseases, used injections, and had been treated for stricture by the common methods, without ever obtaining the slightest relief. Having been so long harassed from the above causes, he fell into a state of melancholy and nervous irritability, which sometimes almost amounted to insanity. On passing a bougie for him, I found the urethra was diseased, but more particularly in the anterior portion, almost throughout its whole course. There were strictures at two inches, three inches, and four inches from the orifice, and also one in the membranous portion. I

operated on the first two at once, and kept the parts open by passing bougies. When the healing process had taken place, and when the contracted parts were enlarged to the natural size of the canal, the third stricture was divided; this also was kept open and enlarged, until the hardened substance of which it was formed was absorbed. The discharge ceased, and the pain and irritability of the urethra subsided. As the stricture in the membranous portion would admit through it a bougie, and as I had reason to believe it was kept up from sympathy with the others, I recommended it to be treated by simple dilatation. It yielded to this method, and my patient returned home perfectly well. I have since heard from him; and he informed me, that from having been one of the most miserable men in existence, he is now one of the most happy.

A discharge from the urethra, like gleet, is one of the commonest symptoms of stricture; but a profuse discharge, resembling gonorrhœa, is not so common. It no doubt arose, in this case, from so much disease being present in the anterior part of the urethra, and thus the irritation kept up a constant morbid secretion from

the mucous membrane lining the canal. I have seen the same affection occasionally take place in other cases of stricture, and it has usually arisen from some excitement of the part, caused by irregularity of living, drinking more wine than the patient is in the habit of doing, &c. As I have remarked before, and as I have related in other cases, an affection of the mind is not an uncommon attendant on this disease.

CASE XLI.

Two Strictures divided by the Lancetted Stilette.

MR. R., æt. 47, has been afflicted with strictures for nineteen years, which arose from a badly-treated gonorrhœa. He has been in the continual habit of passing bougies ever since; and although he sometimes has obtained relief during their employment, yet they have always returned immediately afterwards. Seventeen years ago he had retention of urine, which ended in extravasation into the perineum, the region of the pubes, and the parts adjacent. An opening was made into the urinary abscess by the surgeons who attended him at the time,

and a considerable quantity of urine and pus let out. For about two months after the operation the urine passed through the wound in the perineum. The wound at length healed up, and the natural passage was restored. Since this period he has passed bougies for himself, but of late years the passage has nearly closed up again; and in consequence of the pain and irritation of the urethra and bladder, his health has greatly suffered, and his rest at night, from the constant inclination to make water, has been broken. On examining him I found two strictures, one four inches from the orifice, and the other six: through these I could pass only the smallest sized bougie. On the 18th of this month (June, 1834) I divided the first stricture, and on the 20th the second. Steel dilators have since been passed daily; and at this present time I can introduce into the bladder a No. 12 with the greatest facility. This patient has never been confined, and has gone about as usual. He has lost all the pain and irritation of the urethra, and can void his urine in a full-sized stream.

CASES OF THE CONTINUED CONTRACTION OF THE
URETHRA*.

THE continued contraction of the urethra, or what has been termed the *Long Stricture*, I have before remarked upon at pages 14 and 15. I have usually found it necessary in these cases to perforate the obstruction very gradually, and at different operations.

CASE XLII.

Stricture, upwards of two inches, perforated.

X. Y. Z., a gentleman of spare habit, applied to me in December with an impermeable stricture situated five inches and three quarters from the orifice. His urine flowed by drops, dribbling sometimes away from him involuntarily; and he was obliged to rise once or twice every hour during the night to void it. He had several times suffered from complete retention. But the history of the case will be best learned from his own words.

My dear Sir,

As I consider it to amount almost to a duty, both as regards yourself, as well as those who

* There are other cases related in this work which might have been classed under this head. They were placed, however, in the order they are arranged, to illustrate another character of the disease.

are labouring under the painful malady of stricture, to state the relief I have derived from your novel treatment of it, I shall be excused for making a few remarks on the subject. I date the origin of my stricture to a neglected gonorrhœa, contracted almost nineteen years ago, when the first symptoms of any inflammation in the prostate gland appeared; which having subsided by the application of leeches and poultices of linseed, I soon began a course of bougies. As soon as partial relief was obtained from a use of the bougie, it was discarded, and at the end of a twelvemonth again resumed for a few weeks. About twelve years ago a second gonorrhœa was unfortunately contracted, and was equally disregarded as the other, or a continental tour, just commenced, must have been given up. The usual consequences ensued. On my return to England I sought some of the best advice in London; and from that time (the autumn of 1817) to the present, I have periodically undergone a course of bougies with no less than ten different surgeons of eminence; some of whom only effected a passage of five or six inches with the bougie, whilst others intimated the existence of a false passage, and desisted. Whenever I caught the least cold, or indulged in any iced wines, I was certain of having an irritation at

the neck of the bladder, which at last began to alarm me so much, from three or four suppressions of urine that followed, that I felt delighted to hear of any probable means of an effectual cure. Such did your book, when I had perused it, hold out to me. I may safely say, then, that had I not applied to you, and first had ocular proof of the success attending your instrument at one of the London hospitals, I feel confident my stricture, by means of the common bougie, would never have been overcome. The length of it appeared to be upwards of two inches; which, from memorandums I have made, I find you actually cut through, between the 18th December and the 5th of February, by means of a dozen incisions, which, though they twice occasioned considerable rigor a short time after the operation, really produced but trifling pain in the actual puncture. On February 12th, a sound, No. 8, was passed into the bladder. I should add, that so immediately adjoining the prostate gland was the situation of my stricture, that the utmost caution was necessary, and was invariably your guide, during the whole of your skilful, anxious, and very feeling treatment, which I shall not very readily forget.

I have only to add to this account, that I operated with the single-lancetted stilette, consequently without a director; that I used the instrument twelve times, and must have divided more than two inches; that I was guided by feeling the point of the instrument with my finger per anum, and by my patient's feelings, who was so satisfied that I was in the canal, that he insisted on my continuing the division; particularly as no bleeding of any consequence, pain, or bad symptom, followed. A No. 10 catheter can now be passed, and he makes water freely, having lost all unpleasant symptoms, and being able to retain his urine in his bladder for eight or ten hours together.

MARCH 13, 1829.

CASE XLIII.

Perforation of four inches of Urethra.

A distinguished general officer, rather more than sixty years of age, and of a shattered constitution, from hard service in India, the Peninsula, and other countries, placed himself under my care with a diseased urethra, which he had dreadfully suffered from for

more than thirty years. The canal was irregularly thickened, and contracted to four inches in extent, which began exactly four inches distant from the orifice, and terminated at the prostate gland. He had frequently undergone courses of bougies, and the application of caustic, without any beneficial result; at length ulceration took place in the urethra, the urine was extravasated, and a fistulous passage ensued in the perineum. In course of time this healed up, since which the passage gradually got worse, until it would not admit any thing larger than a No. 3 bougie, which, for the last six months, he has always been obliged to pass into the bladder before he could make water; and if he did not succeed in that operation he invariably suffered from retention of urine. His bladder also had partly lost its power, expelling only about half its contents. The urine was always extremely foetid, and of a turgid dark colour, and there was very frequently deposited a considerable quantity of sediment at the bottom of the chamber-pot of a tenacious thick mucus, such as is secreted in diseases of the prostate gland.

Having given up all hope of deriving any benefit from the common mode of treatment,

he made up his mind to have the diseased structure gradually divided by the stilette. This I accomplished by four different operations, from time to time, and during the whole treatment no unfavourable symptom occurred. At length I was enabled to introduce a No. 12 flexible catheter into the bladder, which I left there a few days. After this time I discharged my patient, allowing him to pass bougies for himself twice a week until the cure was completed. I have since heard from him by letter, in which he states,—

“ I can now decidedly say from experience that your operation has succeeded to my fullest expectation. I have never any difficulty in making water, and I have invariably passed the bougie you desired me (No. 13) without stoppage, pain, or difficulty, every fourth day, and I can even pass a large No. 14.”

He can now expel the whole contents of his bladder; the urine is never foetid, and the prostatic secretion has entirely disappeared.

CASE XLIV.

Obliteration of nearly four inches of the Urethra successfully perforated.

IN the month of January, 1832, I was requested to see a gentleman who had for several years laboured under a permanent stricture of the urethra, which at length had become totally impermeable, not only to bougies and instruments, but almost to the urine itself; and in consequence of this obstruction in the canal, ulceration had taken place behind the part, and the urine had made its escape, by fistulous passages, out at the perineum and scrotum; and through which passages alone it had passed for the last two or three years. Since this period urinary abscesses had repeatedly formed, and produced at the time considerable constitutional disturbance, rigors, pain, and feverishness. The patient, therefore, was always under the necessity of wearing poultices or cloths on the perineum, to absorb the pus and urine; and in addition to this miserable state of things, he suffered from frequent priapism; and when semen was emitted, it of course could not be ejected out at the penis, but flowed into the fistulous passages, and thus

produced the most distressing symptoms. When we examined him we found him in the following state.

A large mass, of an extremely hard structure, nearly the size of a turkey's egg, and which could be taken in the hand, occupied that part of the perineum which joins with the scrotum, so that part of the substance was in the scrotum, and part in the perineum adjoining it. Through this mass passed several fistulous passages, from whence the urine made its exit; and there were also several parts where pus had collected. On taking the substance in the hand, its connexion with the urethra could be traced, and it appeared to occupy two or three inches of the canal, the corpus spongiosum being consolidated. On examining the urethra, an impermeable stricture was present exactly two inches from the orifice, and through which not even the smallest bougie could be passed.

Mr. Kingdon and myself consulted together, and agreed that the case was of that peculiar description that none of the usual modes of treatment offered the slightest chance of relief. The application of caustic was quite out of the

question, the disease occupying so great an extent of the urethra. The division of the part externally, for the same reason could not be adopted; and the excision of the hardened mass would have destroyed so large a portion of the canal (at least four inches) that the ultimate result would have been extremely doubtful. The only treatment, therefore, left, was the perforation of the part within the canal of the urethra; and even this operation appeared likely to be attended with uncertainty and difficulty, from the great length of urethra that was obliterated. The disease, however, being in the anterior part of the canal, and where it could be pretty well judged whether the cutting was in the right passage or not, I undertook the case. The patient consented to the operation, and fixed to have it performed in a fortnight from the consultation, and requested that Mr. Copeland, of Golden Square, might be present.

On the day appointed, Mr. Copeland, Mr. Kingdon, and myself, met; and the operation was performed in their presence. The penis was elongated with the left hand, and the straight lancetted stilette, or urethral perforator (No. 4), passed down to the stricture.

When the point of the instrument rested upon the obstruction, the lancet was sharply thrust forward; and it penetrated, though not without considerable resistance, the hardened substance of the stricture. The blunt point of the instrument was then forced on into the incision made. The obstruction still existed. Another incision was made, and the blunt point was pushed on into it as before. In this manner, first making an incision, and then passing the blunt point of the instrument on into it, nearly four inches of the urethra was perforated. The instrument was then withdrawn, and some bleeding took place; but not more, nor even, perhaps, so much, as might have been expected from such an extent of cut surface. When the bleeding had ceased, which was in about two or three minutes, a small gum elastic catheter was passed through the perforated part into the bladder, secured, and left there. During the whole operation so little pain was given, that the patient at the time expressed his surprise. The newly-made canal was in an exact line with the natural course of the urethra; and the structure through which I cut was so hard and tough, that it required forcible incisions to penetrate it. After the operation was finished

he was placed in bed, and requested to foment the perineum.

In the evening he was free from pain; he had had no rigors, which was sometimes the case when even a bougie had been passed; and the urine flowed both through and on one side of the catheter. He was ordered an opiate immediately, and a dose of castor oil the next morning. On the next day he had no pain in the urethra; he had passed a good night, and the urine flowed through and on one side of the catheter; and there were no constitutional symptoms more than would naturally occur from such an operation. The catheter was removed, and one double its size introduced.

From this time the catheter was changed to a larger size every second day; and in ten days from the operation a No. 10 could be passed, and in a fortnight a No. 12. Steel dilators were now passed; and in three weeks I took leave of the patient, on condition that he would for the present pass bougies twice in the week for himself, and afterwards as often as he required them.

The fistulous passages remained open, which cannot be wondered at, when we consider the great length of time they had existed, and that they formed the only channel by which the urine could be voided. The hardened mass in the perineum became gradually absorbed; but occasionally a few drops of urine passed through the fistulous passages.

On inquiring after the present state of this patient's health, (Feb. 14, 1834, more than two years from the operation), I received the following answer:—That although he was not quite so well as during the first six months after the operation, yet he attributed this circumstance to his own neglect, from not having persevered in introducing bougies so frequently as would be desirable. He can now, however, pass a bougie as large as a goose-quill, and this he is in the habit of doing only once in six weeks. He experiences a difficulty, from this cause, to open the stricture, and afterwards the parts are generally so inflamed and swelled for about twenty-four hours, that he is obliged to pass a small bougie to relieve the spasm, and to assist him in making water. From the swelling and spasm, also, a few drops of the urine and semen are

sometimes kept back, and give rise to the occasional formation of abscesses about the opening, which was caused by the stricture when it was in its worst state: in other respects, when the bougie has not been passed, he is very well; he makes water in a good-sized stream, and his health does not suffer.

The immense extent of urethra that was diseased and obliterated in this case is remarkable; and it is not the less so, that the patient was able to bear the perforation of so great a length of the canal at one operation. The pain appeared to be inconsiderable, and the bleeding trifling; both of which, no doubt, may be accounted for by the insensibility and want of vascularity of the ligamentous or cartilaginous structure which formed the disease. The hardened mass in the perineum was no doubt formed from the urine constantly lodging in the fistulous passages, and thus producing a thickening of the parts. There were also some symptoms attending this case not common. The constant disposition to priapism can hardly be accounted for. When we consider the consolidated state of so great a length of the urethra, and of the corpus spon-

giosum surrounding it, we can only be surprised at this phenomenon occurring so frequently. How to explain such a symptom would be difficult, for, from the obliterated vessels of the corpus spongiosum, and the unyielding and inelastic nature of the indurated urethra, one would have imagined the contrary would have been the case ; and that when the corpora cavernosa became distended with blood, the penis would, as in chordee, have been turned downwards. It is a singular fact, that when the stricture was only touched before the operation, it frequently produced rigor : after the operation, this symptom never occurred. I have observed this in other cases ; that is to say, if the stricture was only touched, rigor supervened ; if, however, the bougie passed quite through it, this symptom did not happen.

From the account given by the patient, it may be observed that, although a bougie as large as a goose-quill can now be passed, yet the passage is narrowed at the perforated part. This may be accounted for by the patient, as he himself acknowledges, having neglected to pass a bougie (doing it only once in six weeks,)

as often as I requested him ; and also from my having operated with so small an instrument (a No. 4). I have observed, when I have been obliged to perforate with a very small instrument, that the stricture, if the passing of bougies be neglected, is liable to close up again to that size. I therefore, on this account, generally enlarge the passage afterwards with a cutting instrument, which usually prevents such an occurrence. I regretted extremely that I had not the opportunity of doing it in this case ; but the time this gentleman could spare to remain under my care being only three weeks, rendered it impracticable. It could be done, however, at this time, and I am convinced with considerable benefit.

The fistulous passages remaining open, no doubt is owing to their passing through so diseased and indurated a structure, and their having become, which is usually the case when the urine has passed through them for a considerable time, lined by a membrane something analogous to that of the urethra. The narrowing of the stricture, likewise, keeps back a few drops of urine which lodges in them, and thus irritation arises, producing occasional abscesses. For the same reason, also,

a portion of the semen is kept back, and gives rise to the same inconvenience. If the part were widened, it is more than probable that neither of these annoyances would occur.

The present state of this patient, compared with what it was previous to the operation, is even more than comparatively happy. Before, he could pass but few drops of urine through the natural channel; it mostly made its escape out at the perineum and scrotum, and got lodged in the cavities of the urinary abscesses: now, he can make water in a full stream, and the only inconveniences he suffers from are those above mentioned, and which might no doubt be obviated by treatment.

PERFORATION OF THE THIRD LOBE OF THE PROSTATE
GLAND.

ONE of the most common diseases of the prostate is enlargement of its middle or third lobe, so ably described by Sir Everard Home, and which gives rise either to partial or total retention of urine. As our remedies for the relief of this distressing disease are very limited, the two following cases, in one of which this por-

tion of the gland was perforated, and in the other punctured with success by the lancetted stilette or armed catheter, may not perhaps be considered uninteresting.

CASE XLV.

Enlargement of the middle or third Lobe of the Prostate Gland, successfully treated by Perforation.

A gentleman, about fifty years of age, and of a spare habit of body, applied to me with an impermeable stricture of the urethra, and gave the following history of its formation and progress:—About 30 years since he contracted a gonorrhœa, which, according to the practice prevalent at that time, was treated by powerful astringent injections. The gonorrhœa ceased; but in a few months afterwards the stream of urine became considerably diminished in size, in consequence of which he consulted the surgeon of his regiment, (for he was at that time in the army,) who recommended the use of bougies. These he employed, gradually increasing their size, for some months; and when it was considered that the contraction was sufficiently dilated, he discontinued their use. The stricture, however, in a year or two returned, and he again had recourse to bougies.

A recurrence of the disease was the result; and it now became so unmanageable that he was obliged to quit the army. At this period very small bougies could be occasionally passed, but they caused great irritation; and if they were discontinued any length of time the part immediately closed up. Some time after this lunar caustic was applied, with the view of destroying the diseased portion of the urethra; but instead of producing the desired effect, it rather increased the malady. The disease being afterwards neglected, the stricture became impermeable; and when I first saw the patient, it had been in that state for two years. Upon examination I found the obstruction was situate about one-fourth of an inch anterior to the bulb; that it was of an indurated character, and that the prostate gland was slightly enlarged. The urine flowed so scantily that it usually took from two to four hours to empty the bladder, and that in a manner most painfully distressing. He was obliged to elongate the penis to its utmost, to strain with so great a force that the perspiration frequently stood upon the forehead in large drops, and to walk to and fro in this state, writhing in the severest agony, before he could expel a drop. In this manner he could collect, in about five

or ten minutes, a small spoonful of urine, and by this method alone could he evacuate the contents of his bladder. During the period of his complaint he had occasional attacks of retention of urine; and at one time there was an abscess formed in the perineum; as, however, no urine made its escape, it seems doubtful whether this was connected with the urethra.

On July 30th I began to divide the stricture with the single-lancetted stilette, and thinking it probable, from the history of the case, that a considerable extent of the urethra was indurated and diseased, I proceeded with the greatest caution; because if the contraction is of great length, and, as it not unfrequently happens in such cases, tortuous, too great boldness in the use of the instrument would incur a danger of making a false passage, or giving rise to inflammation and tumefaction sufficient to cause complete retention of urine; I therefore never divided at any one time more than the sixth or eighth of an inch. The diseased portion of the urethra was about two inches in length, and its structure varied considerably. Sometimes it was extremely hard, so much so as almost to resist the entrance of the lancet into it; sometimes a gritty substance was pe-

netrated; and sometimes the part was of a more spongy and vascular nature. In about four months the stricture was by this gradual manner divided, and no unfavourable symptom during the whole period occurred. The patient took his usual exercise, and lived on animal food, but he was not allowed to drink wine or fermented liquors. The operation of cutting was never attended with much pain, nor was there ever any loss of blood amounting to more than a dessert spoonful; and this occurred only once. The hardened structure appeared to become absorbed, since each portion after its division remained pervious.

After having permeated so great an extent of the urethra, the patient was attacked by retention of urine, which could not, however, be called complete, as he was able to void, though with great straining and extreme pain, about a tea-cupful of urine during the day. The bladder now became considerably distended; the urine was extremely foetid; and at the bottom of the vessel which contained it there was deposited a muco-purulent sediment tinged with blood. Having completely cleared the urethra down to the prostate gland, I examined per anum the state of this organ, and

found it to be rather more enlarged than on the first examination, and that on pressure with the finger it was extremely tender. The pulse was at this time hard, and at 90; the tongue very dry and furred; the skin hot; and the countenance full of distress and anxiety.

He was ordered (Nov. 25 and 26) to lose blood from the perineum by leeches and cupping, to make use of the warm bath, to foment, to take purgatives and opiates, and to use the latter in injections and suppositories. All these means failed to produce any effect, and the bladder was becoming so distended that there was reason to fear that it might burst, or urinary coma might come on, unless it was punctured; or unless the operation which shall presently be described was performed. At this crisis, therefore, I requested to have another opinion, and my friend Mr. Lawrence, surgeon to St. Bartholomew's Hospital, was called. The catheter could at this time be passed to the length of eight inches and a half; and on examining its point per anum, it appeared to have entered into the anterior part, or mouth, of the prostate, and there to be obstructed. In this state of the case Mr. L. concurred with me in thinking it would be best to cut on through

the obstruction, which appeared to be an enlargement of the third lobe of the prostate, with the lancetted stilette, in as near a line as possible in the natural channel into the bladder. Having introduced the instrument, I thrust forth the lancet at its point, and cautiously perforated the obstruction, until I advanced nearly two inches farther. The stilette now was eleven inches, but no urine flowed. It was therefore withdrawn, and a catheter was passed to the same point, but it would not go farther, until upon examination with the finger per anum, in order to discover its exact situation, it slipped into the bladder, and upwards of three pints of foetid urine were evacuated. In performing the operation the handle of the instrument was depressed as much as possible; and when the lancet which had made the cut had receded into its sheath, the blunt point was thrust on with the greatest caution, until it had reached the extremity of the incision. The perforation was accomplished by protruding the lancet three times. The operation produced but little pain, and the bleeding was so trifling that it could only be perceived by examining the point of the instrument. A No. 9 silver catheter was left in the bladder and secured, and the patient remained in bed. An

opiate draught was administered. In the evening the pulse was reduced to 80; the skin had become moist, and the countenance had in a great measure lost the expression of anxiety.

Nov. 27.—The urine had flowed freely through the catheter, and my patient had slept about two hours during the night. The pulse 75, and soft; skin moist; tongue less furred, and not so dry; the countenance had recovered its usual composure. An aperient was ordered, which having produced two motions, the opiate was repeated in the evening.

28th.—The urine still flowed freely through the catheter, and occasionally on one side of it. Pulse 80, and soft; skin cool; tongue becoming clean and moist. He had slept during the night for four hours. The catheter was still kept in the bladder, and he took an opiate at bed-time.

The patient from this time went on favourably; and as the catheter began to cause great uneasiness, I found it necessary, one week after the operation, to withdraw it, which I did not do before, because I thought it better to allow the perforated prostate to recover itself

as much as possible before another instrument was passed, or the urine was allowed to flow through it. I therefore introduced an elastic gum catheter, and did not even permit the patient to attempt to make water. It passed through the whole course of the urethra without meeting with the least impediment, and the parts at the prostate appeared to be more open than the rest of the canal. The catheter was left in the bladder for another week, when it was taken out altogether. The patient, however, at first was incapable of making water, so that it was necessary to draw it off three or four times a day, which he did himself without the least difficulty, and what is singular, and proves that the obstruction was chiefly at the neck of the bladder, is, that he could eject the urine by the action of the detrusor muscles to a considerable distance through the catheter.

In about three weeks from the operation he began to make water of his own accord, and it was not always necessary to draw it off: in less than six he could completely empty the bladder of its contents. He now felt but little pain either in the bladder or the urethra; and as he got an attack of jaundice, and began to suffer in his general health from confinement

and a London atmosphere, I advised him to return into the country, which he did on the 15th January, 1830, and accomplished a journey of 350 miles in a carriage in less than five days. I have since heard from him several times, and he has informed me that he was quite recovered. The passage through the stricture and prostate gland remained freely open, and he could void his urine as well as ever he did in his life.

There are two points of interest in this case. 1st, It shows that an impermeable stricture more than two inches in length may be divided without danger by the lancetted stilette; and, 2ndly, That an enlargement of the third or middle lobe of the prostate gland may likewise be perforated with perfect safety. It may be observed in this case that the prostate itself was not much enlarged, but that it was chiefly the third lobe. This fact is proved by the previous symptoms, as well as from my being enabled to pass the catheter $8\frac{1}{2}$ inches down the urethra, and there meeting with an obstacle. That this impediment to the complete introduction of this instrument was an enlargement of the middle lobe, is also furthermore proved by the necessity there was of perforating at least

two inches more, making the urethra eleven inches instead of nine before the bladder was entered. From this circumstance it would appear that this portion of the gland must have been more than usually increased in size, arising most probably from temporary inflammation. The subsequent symptoms tend to show that the obstruction was chiefly at the neck of the bladder; for although he could not void the urine of his own accord, he could eject it through the catheter; but when the swelling of the part subsided, he recovered this power, and could make water naturally.

In the case before us it will be seen that there was neither pain nor hæmorrhage from the operation, and that immediately after it the frequency of the pulse subsided, the skin became moist, the tongue clean, the anxiety of the countenance vanished, and the pain abated. The swelling of the prostate gland subsided; the perforation through the third lobe, and the diseased portion of the urethra, remained freely open, and became quite healed, conveying to the finger, when a catheter was passed, a sensation as if it were covered by a membrane analogous to that lining the healthy urethra. The bladder gradually regained its power, and

the patient in a few weeks was restored to perfect health.

CASE XLVI.

Perforation of the middle or third lobe of the Prostate Gland.

THE following case occurred in consultation with Mr. Kingdon; and as he has published it in the Medical Gazette, I shall extract it from thence, and give it in his own words:—

“The case I now allude to was one of a gentleman, about sixty years of age, who came to me with abscess in perineo, and an impassable stricture a little anterior to the membranous portion of the urethra. He had, thirty years before, suffered from stricture, and had consulted Mr., now Sir-Astley Cooper, who, he said, gave him so much pain, that he had not courage again to consult a surgeon till in his present distress. A free opening was made into the abscess, which was extensive, and the larger portion of his urine passed through it, giving him intense pain. I was successful in my treatment of the stricture, and could pass a tolerable sized bougie; but though I felt

satisfied, from the direction of the instrument, that it was in the prostatic portion of the urethra, I could not by any manipulation get the point of the catheter into the bladder. The patient, from continued suffering, lost his health; and, from want of appetite and sleep, was reduced almost to a skeleton. The impression conveyed to my mind from the end of the catheter produced a desire to have a controllable stilette at that point; and I requested Mr. Stafford to meet me with his instruments. The curved canula with stilette was applied, and urged on about one-third of an inch; after which a catheter of equal size was tried, but without effect. In four days, however, after the operation, the catheter passed freely, and was kept in for some time; then the patient was taught to pass it for himself, when required, but prohibited from attempting to pass urine without the catheter, till the seat of the abscess had lost all sense of tenderness, and the fistulous opening perfectly closed. Appetite, sleep, and health, were recovered, and continue,—or I am confident I should have again been consulted.”

From the situation of the point of the instrument there can be but little doubt that the ob-

struction met with was an enlarged third lobe of the prostate gland. It is most probable, from our not being able to introduce a catheter at once, that the instrument did not quite complete the perforation, and that the rest of the process was continued by ulceration of the undivided part.

CASE XLVII.

Puncture of the third lobe of the Prostate Gland.

A GENTLEMAN, æt. 49, naturally very thin, but apparently rendered more so from disease, placed himself under my care with the following symptoms:—For many years past (nearly thirty) he had experienced great difficulty in making water, and the stream of urine had always been diminished in volume. Latterly, within the last five or six years, these symptoms had gradually increased; and at the present time the water passes from him almost guttatim. During the time of making it also he is under the necessity of straining; but if he exerts himself too violently, it gives him great pain, and the neck of the bladder appears to close up; and thus the escape of the urine is rather retarded than facilitated. His

urine is foetid and muddy, and of a dark colour, and the contents of the bladder are not completely evacuated. The state of the urethra is as follows:—The natural orifice is completely closed, but there is an opening connected with the canal immediately beneath it. About half an inch anterior to the bulb there is a stricture totally impermeable to a bougie; and anterior to this there is a false passage which had been made two years before by caustic, and which at the time bled so profusely, that the hæmorrhage did not cease for more than four days. When a bougie is now passed, it is with the greatest difficulty this deviation from the natural canal can be avoided; and if its point should chance to enter it, blood instantly gushes forth so largely from the urethra, as to give it the appearance of an artery being wounded. The body of the prostate gland is slightly enlarged, but not more so than is common at the period of life at which the patient is arrived.

After enlarging the orifice to its natural size, I gradually divided the diseased portion of the urethra, which extended about an inch and a half; and though in this case, as in the former, I proceeded with the greatest caution, for the reasons I have already mentioned, the

operation was accomplished in four or five weeks. I found when I arrived at the prostate that the instrument was still obstructed, and would not enter the bladder. The patient could make water in a larger stream, but he had still the same difficulty in expelling it, and the bladder never emptied itself. For these reasons, and as the catheter could be passed rather more than eight inches, and its point could be felt to have entered the prostatic portion of the urethra, I concluded this obstruction could be no other than an enlargement of the third or middle lobe; I therefore, as the symptoms were not very urgent, cautiously made three or four punctures in it. The patient felt some pain, and expressed himself as if something had been incised at the neck of the bladder. No bleeding ensued; and, indeed, so little did he suffer from it, that he felt no greater uneasiness than before the operation. In three days more I made the same number of punctures, which gave rise to exactly the same sensations at the time, but nothing more was felt. After the same interval of time I again punctured the part, and on my fourth visit my patient expressed himself considerably relieved. He could make water better, and he thought the bladder had gained more power. To ascer-

tain the state of the urethra, I now introduced a steel sound, which passed easily into the bladder. On drawing off the urine afterwards, I discovered that the bladder could expel only half its contents. A catheter, therefore, was introduced night and morning, gradually increasing its size, until this organ completely regained its power. In about six weeks or two months the urinary organs of this patient were restored to their healthy function.

In this case it appears that the middle or third lobe of the prostate gland was so enlarged as to form a valvular obstruction at the neck of the bladder, and that, from the repeated punctures in its substance, the swelling of the part went down. It is impossible to say by what process this was effected; nevertheless, the fact opens to our view a method of treating a disease for which before but little could be done. Experience alone can show its ultimate utility; but from mere reasoning, the puncturing of an enlarged and hardened part, with the view of reducing it, appears rational, and facts even, as far as they go, lead us to such a conclusion. The prostate gland is not a very sensitive part, and it does not appear

to suffer much injury from a wound of the middle or third lobe.

In the Hunterian Collection, in the Museum of the College of Surgeons of London, there are three preparations in which this portion of the gland has been wounded by the forcible introduction of a catheter into the bladder, without any bad consequences having ensued. In the first, this instrument has perforated the middle lobe, and through the opening thus made the urine was drawn off for five years afterwards. In the second, the third lobe is completely severed, and the divided surfaces are covered by a membrane analogous to that which lines the portion of the urethra which passes through the prostate; and in the third, the middle lobe, which was not so much enlarged as in the other cases, is also torn, without any apparent inconvenience having been sustained. It unfortunately happens that no particular history of these cases has been recorded.

ON DIVISION
OF
PERMANENT STRICTURE.

CHAP. VI.

*On Division of Permanent Strictures: Cases and
Remarks.—Conclusion.*

THERE are some permanent strictures of the urethra of so obstinate and incurable a nature, that although they will allow of a tolerably sized bougie to be passed through them, yet immediately on the withdrawal of the instrument, or soon afterwards, they will retract to their former calibre. These I have termed the *Permanent Elastic Stricture*, and they are of that harassing description that the patient is constantly attempting to dilate the contraction without effect. He passes bougies from time to time, but makes but little or no advance towards cure. The disease gradually returns; the symptoms consequent upon it prey upon his health and spirits; he makes constant attempts to relieve himself without avail; and

so he goes on, vexed and disappointed, until the end of his life.

The cause of this peculiar description of disease no doubt arises from the structure of the part which forms the stricture ; the consistence of which being indurated and tough, is of a firmer substance than the natural canal, and at the same time being elastic, it presses in upon it, and thus resembles an Indian-rubber girdle of a smaller encircling a more flexible tube of a larger circumference. The flexible tube of a larger circumference is consequently pressed in upon by the one surrounding it. The elasticity of this kind of stricture varies. Sometimes the part immediately collapses after the withdrawal of the bougie ; sometimes it gradually returns to its original calibre ; and at other times a week, a fortnight, and even more time, may elapse before it has closed again.

The treatment which I have adopted, and which I have found completely effectual in this description of stricture, is *the division of the contracted part within the canal of the urethra*. This operation has at once opened the part to its natural calibre ; the hardened structure which has formed the stricture has become ab-

sorbed, and the patients have usually had no return of the disease. The method of performing it I have elsewhere explained; it is extremely simple, attended with but little pain, and no evil consequences have ever arisen from it. On the contrary, those who have been afflicted with this disease for years, and when all the usual methods of treatment have failed, have been completely cured in a very short period by having the stricture divided within the canal of the urethra.

The cases most adapted to this treatment are those I have just mentioned,—the indurated, tough, and yet elastic stricture, which will neither become absorbed nor yield to dilatation. I have no hesitation in saying, however, that in my opinion all permanent strictures would be much sooner and more effectually cured by division within the urethra. The treatment of stricture by dilatation usually takes weeks, generally months, and sometimes even years, before the disease is much benefited, and after all, it returns again. Surely it would be by far preferable, when only a small bougie can be passed, to open the part at once. By doing this we should prevent any danger of retention of urine; the urine

would flow almost immediately in a natural sized stream ; the diseased and hardened part, by being cut through and freed, would become absorbed, and the calibre of the canal, where the stricture had formed, would be of the natural size. The patient would be much sooner cured, being, perhaps, only a month or so under treatment, and he also would be saved the continued sufferings consequent on the disease ; the pain, the distress, and anxiety of mind, and the misery of voiding his urine through a contracted canal.

In proof of what I have just advanced, I shall now relate a series of cases where this operation has been performed ;—cases which, from their aggravated nature, had resisted all other means of relief, but which, from the easy, painless, and speedy manner they were cured, prove the treatment to be adapted to all the forms of permanent stricture.

CASE XLVIII.

Stricture in a man of seventy-four, and which had caused incontinence of urine, divided.

DECEMBER 10, 1827.—John Sych, ætat. 74, has suffered from stricture twenty-three years, during which time he has frequently endeavoured to dilate it with bougies, but immediately on leaving off their use the passage has again closed. During this period he has had frequent attacks of retention of urine; but for the last ten years past he has been afflicted with incontinence of urine, so that he has been unable to keep his clothes or his bed dry. Upon examination I found a stricture six inches from the orifice, through which I could only pass a catheter No. 1; and as the contraction, when dilated, had always closed again, I resolved to use the double-lancetted catheter: I accordingly introduced the wire through the catheter, withdrawing it, and leaving the former in the urethra. I then passed the armed catheter over it; and, when it arrived at the stricture, I pressed upon the handle of the stilette, and protruded the lancets. By two incisions the stricture was divided, and the catheter No. 10 was left in

the bladder. The operation gave but little pain, and there was but very slight bleeding. The patient, in fact, was astonished that so large an instrument could be got into the bladder, not being aware that it had been divided. On the evening of the same day he felt pain in the urethra, and there appeared to be a disposition to inflammation: the catheter, therefore, was withdrawn, and leeches applied to the perineum, besides its being constantly fomented.

11th.—He had felt a little restless during the night; but, upon the whole, he had slept tolerably well. His pulse was quiet, being only seventy-five; and he had had no unpleasant symptom. A catheter No. 11 was passed with the greatest ease. Since the operation his urine has not flowed involuntarily, and he has been able to retain it in the bladder. He was ordered twelve leeches to the perineum, to take an aperient draught, and to foment: if necessary, also, to take an opiate at night.

12th.—He had slept well during the night; his pulse still remained quiet, and he had no untoward symptom: he only feels pain as the

urine passes through the divided part. A catheter was passed, and he was ordered to continue fomenting.

It is unnecessary for me to give any further history of this case. The patient went on so well that he quite recovered in a fortnight. A No. 13 catheter could be passed without pain, and with great ease. He now has no incontinence of urine, and he makes water with the greatest freedom. He continues well (June 30th, 1828); and his health is as good as an old man past seventy can expect.

N. B. (1835).—This man lived two years without any symptoms of stricture, and died, *æt.* seventy-six, from diseased lungs, and the infirmities of old age. On examination, the calibre of the canal was found natural throughout; there was no hardness round the part that had been formerly contracted, and the membrane lining it was continuous with the rest of the urethra. The only difference that could be perceived was a little redness and roughness, and the incisions made by the instrument could be traced, though not very distinctly. The preparation is in the museum of the Royal College of Surgeons of London.

CASE XLIX.

Stricture of twenty years' standing divided.

JOHN HAWKES, æt. fifty-one.—Feb. 1828, has suffered from stricture for about twenty years, which has reduced him to an extreme degree of emaciation. He has at various times been under treatment at different hospitals, but never with complete relief. At present the disease is more aggravated than it ever has been. He suffers great pain, he has sleepless nights, and makes water with great difficulty. Upon examination I found he had a stricture three inches from the orifice, and he complains that when the urine arrives at this part, it is suddenly stopped, and that it is infiltrated through it by drops. The stricture, which could be felt externally, (the urethra being hardened for at least half an inch) would only admit a very fine wire. Over this I passed the straight double-lancetted stilette, and divided the stricture. On attempting to pass a catheter, I found another stricture in the membranous portion. This was of an inflammatory character; I therefore treated it by the ordinary means, and passed a bougie through the divided one daily, which was cured in a fort-

night. In six weeks the other also got well, and the man was completely restored to health.

CASE L.

Stricture, four inches and a half from the orifice, divided.

A. B. ætat. sixty-four.—March 1828; has suffered from stricture for many years, during which time he has had all those distressing symptoms attendant upon that disease. He has been unable to void his urine in any other manner than in drops; he has frequently suffered from retention of urine, and he now has a perpetual desire to make water, which in the night-time prevents his sleeping. Frequent attempts have been made to dilate the stricture, which is situated four inches and a half from the orifice; but it is of so cartilaginous a hardness that they have always been unsuccessful. The smallest-sized catheter can be at present passed through the contraction, but with great difficulty.

On March 7th, Mr. Chevalier (to whose kindness I am indebted for the case) and myself employed the double-lancetted stilette.

The catheter, containing a wire, was introduced, and the former withdrawn while the latter was left in the canal of the urethra. The stilette was then passed over the wire, and when arrived at the stricture, the lancets protruded. These evidently incised the contraction, but the blunt point of the stilette would not pass on. The lancets were again employed, without apparently giving pain. The stricture appeared to yield, but the instrument would not entirely pass through it, owing, no doubt, to the excessive hardness and the inelastic and unyielding nature of the contraction. For this reason it was withdrawn, and a smaller catheter (No. 6) introduced, which passed readily into the bladder. This was securely fixed, and the patient was desired not to withdraw it. On the following day he said he had suffered some pain from its presence during the night; but his pulse was not accelerated, nor was there any feverish symptom. He was ordered a purgative draught, leeches, and a fomentation to the perineum, and the catheter was withdrawn. On the next day all inflammatory symptoms had subsided. A catheter (No. 8) was passed and withdrawn: no medicine required.

From this time a catheter was passed daily,

gradually increasing its size; and in about three weeks or a month the stricture was perfectly cured, and all the consequent symptoms from its presence had vanished.

CASE LI.

Contracted orifice divided.

MARCH 1828.—J. S. has a contracted orifice of the urethra, which will only admit through it a very small bougie; and the part around it, at the point of the glans penis, is of a stony hardness. The orifice of the urethra was enlarged to its natural size, and a wedge made of a portion of bougie introduced, and constantly kept there, to prevent its closing. The divided portion secreted pus, and then healed, and the induration decreased. In about a month the indurated part was restored to its healthy condition.

CASE LII.

Stricture, four inches and a half from the orifice, divided.

WILLIAM HOULST, ætat. fifty-four.—April 1828. The exact period when he first per-

ceived he had a stricture he does not recollect ; he believes it to be, however, fourteen or fifteen years ago. For the last five or six years he has suffered great inconvenience from it, having a constant desire to make water, and the stream not being much larger than a hair. About five years ago he was under treatment for it, but since this period it has returned. The stricture is situated four inches and a half from the orifice ; a very small bougie can be passed through it, and it appears to be of a hardened structure. For this reason I considered it to be a case well adapted for the use of the double-lancetted stilette ; and on April 27th I made use of it. After having introduced the smallest-sized catheter containing the wire, through it, I left the latter in the urethra. The double-lancetted stilette was then passed over the wire down to the stricture, and it was divided with great ease. The operation gave but little pain, and there was hardly any bleeding. The patient remarked, that when a bougie was passed for him formerly, it gave him quite as much, if not more pain, than the passage of this instrument. A gum-elastic catheter was introduced into the bladder, and left there, and the patient was ordered to remain in bed, to foment the

perineum, to be placed on farinaceous diet, and to take a brisk purge.

April 28th.—He had suffered but little pain from the presence of the catheter, had had three or four hours' sleep during the night, and felt himself, upon the whole, tolerably comfortable: no medicine required. To continue fomenting.

29th.—Much the same as yesterday; but expressed a wish for the catheter to be withdrawn: this was accordingly done. His aperient draught was repeated, and the fomentation still employed.

30th.—Still going on well. The catheter was passed.

From this period the catheter was passed daily, the same treatment continued, and in three weeks he was perfectly cured.

CASE LIII.

Stricture, producing an extreme degree of emaciation, and threatening a fatal result, divided.

F. J., Esq., applied to me at Brighton, on the 8th of August, 1828. 'The following letter will give the history of the case in his own words:—

“ My dear Sir,

“ I am induced to think you will feel an interest in receiving from myself a particular statement of the commencement and progress of the disease from which I have so long been a sufferer, and also of the treatment I underwent while under the care of some of the most eminent of the profession previous to my becoming your patient.

“ In the autumn of 1799, I first experienced a difficulty in passing my urine ; and as I resided in the neighbourhood of Oxford, I applied to one of the senior and most eminent surgeons of that city. After having carefully examined me, he pronounced my complaint to be a bad stricture, situated about three inches down the urethra, and of so decided a character as to

require Sir Everard Home's method of treatment, by the use of the caustic bougie. In consequence of this information I took lodgings near to him, so that I might reap the benefit of his constant attention. On the first application of the caustic, a considerable effusion of blood followed the removal of the bougie, and this recurred at each time it was employed. The caustic was used at intervals for about a month, when my surgeon discharged me from his hands as cured. It was not until the year 1820 that I again experienced the return of the complaint to such a degree as to require professional attendance; and my former medical friend having retired from practice, I then placed myself under the care of Sir Everard Home, who discovered that the stricture was formed in the same place as before. My urethra was likewise in a very irritable state, and the stricture was attended by severe spasms; so severe, that on one occasion about an inch of the bougie (which was afterwards fortunately forced out by the urine) was actually cut off, and left in the urethra. At this period the caustic was only applied a few times, as it caused great pain and irritation in the urethra, and very distressing rigors were brought on. On this account Sir

Everard, fearing that he might produce serious mischief from its employment, left it off, and merely passed a metallic bougie every third or fourth day. I remained under his care for two months, and although I was much relieved, I was by no means cured. From this time I occasionally passed bougies for myself until the year 1826, when I became so much worse that I could only void my urine drop by drop. The pain in the urethra was excessive; and from the violent straining I was obliged to make, a considerable soreness of the lower part of the abdomen and loins was brought on. The disease began seriously to affect my health; and I therefore was again compelled to have recourse to surgical aid. I accordingly applied to a gentleman of known eminence and experience for advice. His opinions corresponded exactly with the other surgeons, excepting that the stricture was much worse; and he found that it would only admit through it the very smallest bougie, and the introduction of that was always attended with great pain and difficulty. From the very gentle and judicious manner in which he passed the bougie I had great hopes that the disease would have yielded to this remedy. The case, however, after some period of time

had elapsed, continued as obstinate as ever. The caustic, therefore, was again used several times, but it failed in producing the desired effect, and at the same time it gave rise to symptoms threatening retention of urine, for which reason its farther application was abandoned. I now was driven to despair, and gave up all hopes of recovery, as every known remedy had been employed. I continued to get weaker; my appetite was gone; my water frequently flowed from me involuntarily; and my sleep was disturbed seven or eight, and even more times, every night, by a propensity, which was attended by extreme pain, and an involuntary straining, so distressing that it exceeded any thing that I can possibly describe, to make water. In fact, I found my bodily powers gradually declining, and felt aware that under such a state of suffering I could not live very long. On seriously asking my professional attendant (under whose care I had been for nearly two years), if I had any chance of being cured, he very candidly said, 'he thought I should always be subject to the disease;' and he advised me to try the effect of sea air and warm vapour-baths, which he hoped would renovate my health, and enable me to resume the use of bougies. Although I was convinced

all the baths in the world could not restore me to health while I was afflicted with such a painful organic disease, yet I yielded to the earnest solicitation of my family solely for their satisfaction. I joined my youngest son, who was at this time at Brighton (July 1828). I had not been there, I believe, a fortnight, when I found myself getting alarmingly worse. At length I was attacked with retention of urine, and on the 4th of August I became your patient. * * * * *

N. B. This hiatus was filled with complimentary observations, unnecessary to be repeated.

“ I need not detail the history of my case any farther. I think it right, however, to mention that the pain of the operation of dividing the stricture was so trifling, that I have many times suffered more from the passage of the bougie; and when I speak of it, as compared with the application of caustic, it really is nothing. In conclusion, I beg to add that I am sixty-one years of age, and that I have been suffering from this complaint twenty-nine years. I weighed, nine days after the operation, nine stone twelve pounds; and on the 17th of November following, ten stone eleven pounds and a quarter, being an increase of thirteen pounds

and a quarter. I am now perfectly recovered ; my health is completely restored ; nor should I be aware, from the stream of urine which I at present can make, that I ever had had any obstruction in the urethra.

“ I am, dear Sir,

“ Yours sincerely and gratefully,

“ F. J.”

When I first saw Mr. J. he was labouring under retention of urine. His countenance was pale and emaciated, and his whole system obviously worn out by the long continuance of pain and disease. His hands were tremulous, and his bodily strength so weak that he could scarcely stand. His pulse was feeble and quick : he could eat nothing, and his spirits were low and exhausted. He had not made water for twelve hours ; and had only passed it by drops, and involuntarily, for two years. I first attempted to pass a bougie, but the irritation of the urethra was so excessive as to foil all my attempts ; I therefore ordered twelve leeches to the perineum, fomentations, warm bath, and opiate injections. In two or three hours after their application and use, the urine flowed in drops ; and upon

further trial, I was enabled to introduce a bougie about the size of a knitting-needle. I found the stricture three inches from the orifice: it appeared to extend half an inch, and it could be felt externally like a hard cord. The bougie was stopped by the violent spasm at the membranous part; I therefore withdrew it, and ordered him to repeat the fomentation and injections, and to take an opening draught. The state of my patient; the extreme irritation of the urethra and of the bladder, which, from the discharge of purulent mucus, appeared to be highly inflamed, if not on the verge of ulceration; the long continuance of the disease; and the inefficiency of the usual mode of treatment, determined me to propose dividing it. Having obtained the consent of my patient, I went to London for the instruments. On my return on the following day I found him in much the same state. The day after (Aug. 8,) I operated with the double-lancetted stilette over the wire, in the manner described in the employment of this instrument. He stood up during the whole of the operation, which lasted about a minute and a half, and complained of little pain; and I was surprised to find only a few drops of blood followed the incisions. I divided the stricture throughout its length

without withdrawing the instrument, but could only pass the catheter as far as the membranous portion. Here the spasm was so violent as to make me desist ; I therefore left a No. 9 bougie in the urethra, through the divided stricture. I ordered leeches to be applied immediately, and fomentations. When I came in the evening I was much gratified to find that my patient, wishing to make water, had withdrawn the bougie, and voided his urine in a full stream, and with little pain. I again introduced the same bougie through the stricture, and left it there, ordering a continuance of the fomentations, with an opiate draught.

In the morning of the 9th I found my patient had passed a comfortable night, having been obliged to rise from his bed but once, and having retained the urine eight hours—a circumstance which had not happened for two years. After making water he had himself been able to pass the bougie through the stricture. He now voided his urine in my presence, and in a full stream.

On the following morning he complained of pain from the presence of the bougie ; and the urethra felt sore as the urine passed over it.

Twelve leeches were applied, fomentations ordered, and the bougie withdrawn. In the evening he was feverish, and had a severe rigor during the night; but made water in a full stream, though with rather more pain. On examining the urine in the morning, there was about a dessert-spoonful of puriform sediment. I ordered some antimonial draughts, which, in a few hours, threw him into a profuse perspiration, with great relief. In the evening his pulse was eighty-five, and he seemed much better.

From this time no remarkable symptoms occurred, and the irritation of the urethra gradually subsided. On the day week that the operation was performed the urethra appeared quite healed, and I passed a catheter, No. 8, with ease into the bladder. This I repeated twice a week for a month, gradually enlarging the size of the catheter to the natural calibre of the urethra.

The rapidity with which this patient regained his physical powers was remarkable. His appetite improved; he slept well; he became strong, and he lost that tremulousness which marks an enfeebled body. He daily

gained flesh, his animal spirits increased, and instead of being one who was overtaken by a premature old age, he was by far more active than men of his years usually are.

CASE LIV.

The orifice of the Urethra, and a Stricture five inches from the canal, divided.

JOHN EDWARDS, ætat. 49, admitted into the St. Mary-le-bone Infirmary. This man had suffered from stricture for some years, but seemed, not having had bougies passed, to have had but little surgical attendance. The prepuce was entirely adherent to the glans penis, and the orifice was so closed and hardened that it would not admit through it a larger instrument than a No. 2 catheter. There was an impermeable stricture also five inches down the canal. The hardened edges of the prepuce were circumcised, the prepuce itself dissected from the glans, and thrown back, as in the operation for phymosis. A month elapsed before the parts healed sufficiently to do any thing more. The orifice was then enlarged to its natural size, and kept open by the introduction of a bougie. In a week from this time the urethra was again examined,

and it was found that the stricture would admit through it the smallest catheter. This was accomplished, however, with considerable difficulty; and as it was uncertain whether I might be able to pass it again, I introduced the wire, left it in the urethra, and operated at once with the double-lancetted stilette. The stricture was easily divided; and as there seemed a disposition to great irritation, from the bougie never having been previously passed, I did not leave a catheter in the bladder. Leeches were immediately applied, fomentations used, and a purgative administered. On the next day he had voided his urine with the greatest freedom, but the urethra was so irritable that it would not allow of a catheter being passed through it into the bladder. I therefore left it alone altogether, only using the remedies to allay inflammation. The urine still passed away in a good-sized stream: at the end of three weeks I again tried to pass an instrument, and introduced a No. 12 steel sound into the bladder with the greatest facility. As he had no impediment, and passed his water naturally, I did not think it necessary to irritate his urethra by passing the bougie, and he was discharged cured.

CASE LV.

Successful division of Stricture, where the caustic had been applied more than one hundred times.

FEB. 1829.—General F. æt. 60, an officer in his Majesty's service, who had served many years in India, consulted me under the following circumstances:—He had two strictures of the urethra; one four inches from the orifice, and the other in the membranous portion. In addition to these also, there was an enlarged and hardened prostate gland. The stricture, situated four inches down the canal, was of an extremely indurated structure, and could only admit through it a bougie about the size of a crow-quill; and the other, that in the membranous portion, could allow a bougie of the same size to pass, but with more difficulty, on account of spasm. From these strictures he had been suffering for many years, and of late they had greatly increased. Instead, also, of dilators relieving, they increased the malady; and from the frequent accession of inflammation there was always a danger of retention of urine. About two years ago he was treated by having them dilated according to Dr. Arnott's method. Since this, however, the strictures have returned;

and he has therefore had recourse to the application of caustic, which had been used more than one hundred times. This latter plan of treatment was as unsuccessful as the former, and as the disease was rapidly gaining ground, he at length determined to have the strictures divided with the lancetted stilette.

Feb. 8th.—The operation was performed on the first stricture, which was about three-fourths of an inch in length. He suffered but little pain, and only a few drops of blood followed. The other stricture was left without any thing being done for it. A No. 10 bougie was passed through the divided part; leeches applied, and fomentations used. On the following day, no medicine, excepting an aperient draught, was required. From the anxiety of the patient to keep the parts open, a bougie was left in the urethra for six days, and withdrawn when necessary. A steel sound (No. 10) could at this time be passed, not only through the divided stricture, but also through that at the membranous portion, with the greatest ease. In less than a fortnight from the operation both the strictures would allow of the introduction of a steel sound (No. 15), measuring an inch and one-sixteenth in circum-

ference, to be introduced through them into the bladder ; and this instrument could be passed backwards and forwards through the whole course of the urethra without the slightest obstruction or hardness being felt. Since this time the patient has continued well, and the hardness and size of the prostate gland has considerably subsided.

CASE LVI.

Four inches of diseased Urethra divided.

A MIDDLE-AGED man, a tailor by trade, who was in the habit of applying at St. Bartholomew's Hospital about every fortnight, on account of retention of urine, came under my care in the beginning of the year 1828, with stricture, and disease of the urethra throughout its whole course. It was permeable only to the smallest sized flexible instrument, which could follow its winding as far as four inches, but there stopped. Although this case appeared almost hopeless, yet from the anxiety of the man to have every plan of treatment tried which offered a chance of relief, I operated with the single-lancetted stilette, and succeeded in passing the instrument, by different divisions

of the urethra, to the extent of four inches. I left a bougie in the canal; ordered leeches and fomentations; and on the next morning an aperient draught.

On the following day I found that he had suffered so little as to be sitting on his board at work. He had withdrawn the bougie, and said that he passed his water more freely.

In a week I thought the urethra sufficiently healed to proceed with the treatment, but he declined submitting to any further operation, not, as he stated, from his own fears, but from the interference and apprehension of his friends at so novel a plan of treatment. Since that period I have heard that a large silver catheter has been introduced into the bladder, which before could not be accomplished, and that his urine passes from him in a natural-sized stream.

CASE LVII.

Stricture of eighteen years' standing, cured by one operation with the Lancetted Stilette.

MR. C., a barrister, ætat. thirty-seven, consulted me in January last, under the following

circumstances. He has been the subject of strictures in the urethra about eighteen years; and for the last three years of this time he has periodically undergone a course of bougies. Whenever he leaves off their use, however (although he has introduced as large a size as No. 13), the contraction returns, and he is obliged to go through the same process as before. He is likewise constantly liable to a profuse discharge from the urethra; and at this present time (January) he has symptoms, without being able to account for them, resembling gonorrhœa. On this latter account, therefore, and on account of the contraction always returning, I recommended him to leave off the use of bougies altogether, to attend to the present state of the urethra, and to have the contraction divided with the lancetted stilette, if it returned again.

March 22d.—The discharge having completely ceased, from the employment of the usual remedies, I examined the state of the urethra, with the view of operating if necessary. There were two strictures, one within three inches of the orifice, and the other immediately behind the bulb. The first stricture was so slight as hardly to be perceived; whilst that behind the

bulb was contracted to so great a degree, that it was with the greatest difficulty I could pass the smallest-sized gum-elastic catheter through it. I at length succeeded, however, and operated over the wire. The operation itself did not occupy a minute; and only seven drops of blood, besides that which was on the instrument, followed the incision. The contraction extended about half an inch; and the pain was so trifling from the cutting that the patient himself was astonished that he had felt so little. A No. 12 gum-elastic catheter was passed into the bladder, and left there, and a fomentation was ordered. At ten in the evening I saw him again, and he had not suffered the slightest pain from the presence of the catheter, feeling quite well. His pulse was slightly accelerated, being eighty-six, and the skin rather hot. He was ordered Pulv. Jacobi, gr. v., and to continue fomenting.

March 23d.—Upon seeing him this morning, I found he had passed a comfortable night, and that he had felt no inconvenience from the catheter remaining in the urethra. Pulse seventy-eight, and skin moist. Ordered an aperient. The urine had passed on the side of the catheter. The catheter now caused

so much irritation that it was withdrawn. In a week a No. 12 steel dilator could be passed with ease, and in three this patient was well.

CASE LVIII.

Stricture, just within the orifice of the Urethra, divided.

APRIL 12th, 1829.—A nobleman, about forty years of age, applied to me under the following circumstances:—He had two strictures—one just within the orifice of the urethra, and the other in the membranous portion. The first was about half an inch in length: the part, when felt externally, was hardened, and instead of the lips of the orifice of the urethra being in close contact, as is natural, they gaped, forming a sort of conical opening, until they arrived at the contraction. This stricture would admit through it, but with considerable stretching and pain, a No. 8 or 9 bougie, but on its withdrawal it closed up again. The stricture at the membranous portion also would allow the same sized bougie to be passed, but as soon as it was removed the part also collapsed. This state of canal had existed for many years, and had been a constant source of annoyance

to the patient, causing extreme irritation, and a frequent desire to make water. Bougies had been passed at various times, but never with any sensible effect or relief. Under these circumstances, therefore, I advised that the stricture just within the orifice should be divided, and that the one at the membranous portion should undergo the like treatment, if necessary. Having gained the consent of my patient, I accordingly operated on it. A No. 13 bougie was left in the anterior part of the urethra for a few hours, to keep it open, and afterwards a steel one passed daily. No inflammation of any consequence occurred, and in a fortnight or three weeks the divided surfaces were quite healed, and the lips of the orifice of the urethra returned to their natural form.

CASE LIX.

Stricture in the membranous portion, of thirty-three years' duration, divided.

APRIL 14, 1829.—Mr. K., aged 66, had suffered from a permanent stricture, situated at the membranous portion of the urethra, thirty-three years, and it was of that hardened elastic character, that although bougies of every

description had been constantly passed, yet to whatever size it might be dilated, it always returned. When I first saw him it would admit through it a No. 3 bougie, and as he informed me it would be of little use to attempt to cure it by dilatation, I divided it at once with a No. 12 lancetted stilette, leaving an elastic catheter in the bladder for twelve hours. The operation caused but little pain, and no bleeding. A steel bougie was passed daily for a fortnight or three weeks, and when a No. 16 could be introduced through it without difficulty, I discharged him from my hands, cured.

CASE LX.

Stricture, one inch from the orifice, divided.

MAY, 1829.—Capt. B., between sixty and seventy years of age, had an indurated contraction of the urethra, which could be felt externally, at the distance of one inch from the orifice. This had caused him great inconvenience, for he was obliged, in consequence of a diseased prostate gland, to pass a catheter into the bladder three or four times a day, and he found some trouble in getting by this

obstruction. The part was enlarged by the lancetted stilette to its natural size, and in less than a fortnight it was quite healed.

CASE LXI.

Stricture at the membranous portion, divided.

AUGUST 2, 1829.—Mr. O. consulted me, having had, until latterly, bougies passed for a stricture situated at the membranous portion for nearly two years, without the slightest benefit. He had left off the use of them, however, about three months previous to his applying to me. He wished to have it divided by the lancetted stilette; I accordingly operated upon him over the wire, and by two incisions, which caused but slight pain and little bleeding, I severed the stricture completely through: a No. 10 catheter was left in the bladder for six hours, and then withdrawn. On the following day I passed a steel bougie of the same size, and repeated it daily for a week, until a No. 12 could be introduced with ease. In less than a month from the operation he was quite cured, and the stricture (for I have often heard from him since) has never returned.

CASE LXII.

Stricture in the membranous portion divided—Perfect cure in one month.

MR. S.*, aged seventy-six, about twelve years ago lost more than half his penis from mortification; in consequence of which, when the part healed, the orifice of the urethra became nearly closed, and could not admit a bougie so large as a crow-quill; the part when felt externally was extremely hard, and any attempt to dilate it was impracticable; caustic had been applied, but with no effect. From the long continuance of the disease it had also given rise to a stricture in the membranous portion; indeed the whole urethra was so affected by it that it was impossible to pass a bougie into the bladder. The contracted part was freely divided, and a bougie was left in the orifice for a few hours; no unfavourable symptom occurred, and in less than a fortnight a No. 13 bougie could be passed into

* This patient informed me that Mr. Thomas, the President of the College of Surgeons, sent him to me. I cannot help feeling gratified at the good opinion and liberal conduct of a gentleman of such high professional character.

the bladder with the greatest ease. In a month from the operation all the inflammation and irritability of the urethra subsided, and he could make water with perfect freedom, and in a full stream.

CASE LXIII.

Division of Stricture, with recovery of Partial Paralysis of the Bladder.

JULY 1830.—J. A., Esq., ætat. sixty-four, has had a diseased state of the urethra for many years, of which he gives the following account:—He says,

“ I remember that from an early period of my life I voided urine slowly, so much so as to be laughed at by other boys. In my youth I was not very severely handled in the wars of Venus, although I did not escape without some little complaints ; but I could never discover that the treatment of them materially affected my power of discharging urine. As I grew towards fifty, my difficulty in that respect assumed a more serious appearance. Mr. H. examined the neck of my bladder, and by his advice I passed bougies from time to time,

occasionally increasing the size: but through negligence I pursued this course so imperfectly that the malady gained ground, and at length, in 1825, as well as I recollect, I was brought to a total suppression. Sir Astley Cooper was called in, and with his usual courage, vigour, and skill, introduced a catheter into my bladder, which discharged the unusual quantity of two quarts and half a pint. After this I became more regular in the use of the bougie and the catheter, but the stricture returned, and gained ground so much, that the fluid, when I had attempted to void it naturally, was repelled, and formed a painful and dangerous swelling in the region about the scrotum. Sir Astley Cooper then found it necessary to make an incision near the scrotum, which still continues open. He also recommended the use of catheters and dilators of increasing size, with great frequency, and he admonished me that a premature stopping of the opening he had made might, if my other symptoms returned, endanger my life. I persevered, and could pass Weiss's silver catheter No. 13, but the perpetual irritation occasioned by this course impaired my health, and brought on the ague. At this period Sir Astley Cooper retired for a time from public life, and I lost in

him not only a skilful, but a warm and liberal friend. I then applied to Mr. —, who attended me some time, and did me much good: he relaxed the system recommended by Sir Astley Cooper, and by care and management reduced several swellings which had grown of late, and enabled me with a moderate-sized catheter to perform my evacuations very well: he was then desirous to heal up the wound, but as it did not yield to easy applications he would not advise me, feverish as I was, to try the experiment of creating a sore in the opening, in order that it might be the means of healing it. He left me, when he had done me much good. Still my health continued to grow worse; the perpetual irritation of the catheter, the necessity of lighting a taper several times in every night (for I cannot sleep with a light in my bedroom) kept me in continual fever, and frequent fits of ague attended it."

When I first saw this gentleman he was under the necessity of drawing off his urine with a catheter No. 8, five or six times in the twenty-four hours, and he had so lost the power of his bladder that he could not void more than one or two table spoonful at a time, and this in so small a stream that it was not larger than a

thread. The urine was excessively foetid, and always deposited a mucous sediment. The urethra was free as far as three inches and a half down the canal, but when the catheter arrived at this point it required considerable force to make it pass on, and the rest of the passage was more or less diseased down to the prostate gland. There was a fistulous passage connected with the urethra, opening itself in the back part of the scrotum. The indurated contraction, three inches and a half down the urethra, was first divided, and at different times during the period of six weeks the rest of the canal, wherever an obstruction occurred, was cut through, until a No 12 could be passed with ease. At this time I discovered that the bladder could expel only one-third of its contents. In conjunction with Sir Charles Scudamore and Mr. Hayes, who were also in attendance upon him, I advised him to continue the use of the catheter night and morning, and in less than six weeks more the bladder completely regained its power. During the whole treatment he was never confined to the house, and he followed his customary occupations. His present state of health will be best described in his own words:—

“I am now,” he says, “enabled to void urine without a catheter, in a thin, but vigorous, and continuous stream; I pass a catheter now and then, to assure myself that the passage is quite free, and I am satisfied that it is so, for two or three days ago I introduced the catheter immediately after I had made water naturally, and the residue which was discharged was less than a table-spoonful.”—
18th May, 1830.

He has lost the disposition to ague, and is much improved in his general health: the fistulous passage remains open as formerly.

CASE LXIV.

Division of Stricture in the Membranous Portion.

MR. C., aged forty, had been for many years afflicted with stricture, and he had been constantly under the care of different practitioners with but little benefit. The obstruction was in the membranous portion of the urethra, and would admit a No. 5 or 6 bougie through it; the part had been frequently dilated to a No. 12 or 13 bougie, but as soon as they were

left off the contraction returned, causing a great irritation in the urethra, and a constant desire to make water. Under these circumstances he was determined to have it divided with the lancetted stilette. As the calibre of his urethra was naturally very large, I operated with an instrument the size of a No. 13 bougie: it caused no pain, and very little bleeding. After this bougies were passed twice a week, until the size arrived at 18; and in a few weeks he was perfectly cured.

CASE LXV.

Permanent Elastic Stricture divided.

A SURGEON, æt. sixty, residing in Wales, and who had been obliged to retire from practice in 1810, on account of the distressing symptoms occasioned from strictures in the urethra, gives the following history of his case:—

In the early part of his life he had been frequently the subject of gonorrhœa, which from his extensive practice, and the necessity of being constantly on horseback, he had no opportunity to attend to. Strictures arose in consequence, and these at length became so

bad, and produced so much pain and irritation in the urethra and bladder, that he was forced to leave off business. He then placed himself under the care of Mr. Macilwain, who for the time relieved him. The disease, however, and the symptoms attending it, returned with such increased violence, that he became in a state of the greatest misery. At this time he suffered from a constant and extreme itching in the urethra, and the bladder was so irritable that he was obliged to rise from his bed every half-hour to make water, so that he got no sleep. His health began to suffer materially, and at length, therefore, he made up his mind to go to London, and accordingly he wrote to me on the subject. As it was impossible to tell the precise state of the disease without examining him, I advised him to come. He immediately set off, and on his arrival, instead of coming to me, he went to Mr. Macilwain. This gentleman, in conjunction with Mr. Stanley, examined his urethra, and as they could pass a large-sized instrument into the bladder, they considered he had no stricture. Mr. M. informs me that he requested him to see me, but he went back on the following day into the country without doing so. In about a fortnight from his return he wrote to me again,

stating what he had done, and that he was no better. He wished to know whether I would advise him to return to town, but in my answer to him I declined, after the able opinions he had taken, giving mine on the subject; at the same time, however, I said, that if he made up his mind to do so, I should have much pleasure in attending him. He came; and when I examined him I found that the orifice of the urethra was contracted, and that it felt hard externally. I introduced a No. 10 catheter, which after making steady and firm pressure, went through the contracted part. At about four inches from the orifice I found the same resistance, which by the same means was overcome. I withdrew the instrument, not allowing the urine contained in the bladder to escape through it. I then desired him to make water in my presence, and discovered that the stream was not larger than a packthread: I therefore drew this conclusion;—that although the narrowed parts of the urethra would admit through them a large catheter, yet that they, as I have known them to do in many other instances, immediately collapsed upon the withdrawal of the instrument. In this opinion he himself concurred, and as he had twice come on purpose from so great a distance, nearly

300 miles, and as his sufferings were so great, without the hope of obtaining relief from any other treatment, I advised him to have the narrowed parts freely divided. To this he immediately consented, and I at once operated on the orifice. On the following day I found that the extreme itching of the urethra had entirely subsided, and that even he had not occasion to make water so frequently. In a week from this time the other contraction was cut through, without much pain or bleeding; and he says himself, "although the operation appeared formidable, yet I felt not the least fear, and I was truly surprised to experience so little pain, and the loss of blood was hardly worth naming." He now began to find the irritation of the bladder subside, and that he could retain his urine for three or four hours together. He still, however, felt uncomfortable sensations at the neck of the bladder, which led me to suspect that the organ was partially paralysed, and did not expel the whole of its contents. This I found to be the case, for, after having voided all the urine he could, I passed a catheter, and found about a quarter of a pint left behind. As there was now no impediment in the urethra, I advised him to pass a catheter night and morning, to completely

empty the bladder. He returned to the country, and I have since heard from him several times, and he remains in much the same state as when he left London, and to use his own words, "I can now say, my nights are passed in comfort, not being, perhaps, under the necessity of getting up once in two or three hours, and I experience not the least pain before or after, and my days are passed still more comfortably." He cannot however, completely empty the bladder without the occasional use of the catheter, which he passes with ease.

As this gentleman was, before he came to me, under the care of Mr. Macilwain, and as Mr. M. alludes to him in his work, by saying, "In a urethra admitting already so large an instrument, it is not very clear what Mr. Stafford divided," I feel it incumbent on me to make a few remarks on the case. As I before stated, I found the orifice of the urethra contracted, but that by steady and firm pressure I could pass through it a No. 10 catheter: the same instrument also could be passed by the same means through the contraction four inches down the canal. When, however, the catheter

got beyond these parts, it was tightly grasped by them, and its withdrawal was attended by difficulty, so much so, that when its point was drawn out of the contractions it gave the same kind of sensation as the drawing a cork out of a bottle; that is to say, it was so embraced or girthed round by them, that a jerk was given to the hand. From this circumstance I was led to suspect that the contractions immediately collapsed on the withdrawal of the catheter, and when I saw the stream of urine was not larger than a packthread, I felt convinced of it, and therefore recommended the division of the parts. The relief obtained from the operation is a clear proof that my conjecture was correct, and the gentleman himself being a surgeon, it is not likely that he could have been deceived. I do not, however, deny that the bladder had partially lost his power, most probably owing to an enlargement of the third lobe of the prostate gland, and that it was necessary occasionally to use a catheter, to empty the residue of urine after making water. The patient, however, can now retain his urine for three hours or more together, which before he could not do for half an hour, and all the distressing symptoms he complained of have vanished.

It appears to me that in many cases of old stricture the structure of the diseased part becomes so rigid that the mere passing bougies through it has no power over it, either in dilating it or producing absorption, and that as soon as they are withdrawn it returns to a certain calibre, which is regulated according to the greater or less elasticity of the diseased structure. Hence it resembles an Indian-rubber girdle, surrounding a tube capable of expansion, which Indian-rubber girdle can be stretched equally with the tube to any given point, but which being of a different degree of elasticity, returns to its former circumference, while the tube remains flexible, and thus is compressed by it.

CASE LXVI.

Stricture four inches down the Canal divided.

MR. H., a gentleman between forty and fifty years of age, has been tormented by the necessity of constantly passing bougies for an old stricture, which he has suffered from for about twenty years. The stricture is four inches down the canal, and of an indurated character. It is with great difficulty a bougie is made to

pass it; and in about a week after its introduction the contraction closes up again, and the stream of urine is not larger than a pack-thread. Independently of this also, after each time of using it he is attacked by rigors, and his health is greatly impaired by it. Under these circumstances I recommended that the stricture should be divided, which was accomplished without difficulty. In three weeks from the operation a No 12 catheter could be passed into the bladder without the slightest impediment, and the stream of urine was perfectly natural.

CASE LXVII.

Stricture seven inches from the orifice divided.

FEBRUARY 1830.—Mr. G. aged forty, had long suffered from stricture and the symptoms attendant upon that disease. He voided his urine in a very small stream; there was great irritability and spasm at the neck of the bladder, and he was obliged to make water frequently. The stricture was seven inches from the orifice, and had been impermeable by a bougie, before he came to me, for two years.

By good luck, however, I passed a wire through it, by which I was enabled to divide it at once. A large elastic catheter was left in the bladder for an hour or two. In two days he went about his occupations as usual; and in three weeks he was perfectly cured.

CASE LXVIII.

Stricture in the Membranous Portion divided.

MARCH 1830.—The same nobleman who had consulted me before for a stricture in the orifice of the urethra, was so satisfied with the relief he had obtained from its division, that he applied to me again to operate on the stricture in the membranous portion, as he had derived no benefit from the passage of bougies. According to his request I divided it over the wire, causing but little pain and trifling bleeding, and immediately afterwards passed a No. 11 catheter into the bladder with ease. A bougie was left in the urethra for a few hours, and was then withdrawn. No leeches to the perineum were required, and in other respects the usual treatment was pursued. In a month from the operation the urethra was so freely

open that it would have been impossible to have told where the stricture had been present.

CASE LXIX.

Stricture of seventeen years' standing divided by the Double Lanced Stilette.

MARCH 1831.—Captain B. gives the following history of his case:—That in the summer of 1814 he first found a difficulty in passing his urine, but being then about to embark with his regiment, he had no opportunity of attending to his complaint. In the following year, however, a moderate-sized bougie was passed with difficulty into the bladder; he had not, however, sufficient resolution to continue their employment. In 1818 he contracted two or three gonorrhœas. The disease now became much worse: he had violent pain and spasm at the neck of the bladder; and he voided his urine so indifferently that he was threatened with retention. He resorted to medical aid, and bougies were introduced for him, until a No. 8 could be passed freely into the bladder. In two years afterwards, and from no particular cause, the disease became more distressing than before; and he had frequent attacks

of retention. He underwent another course of bougies, and found temporary relief. In 1829 spasms came on, from having taken too violent horse exercise, and he lost the power of entirely emptying the bladder. He lingered on in a state of great suffering until 1831, when he retired into the country, and consulted an eminent surgeon there. The old treatment was resumed, but with so little effect that his surgeon advised him to have the stricture divided within the urethra by the lancetted stilette. He immediately came to London, and placed himself under my care.

On examining this gentleman, I found a stricture situated exactly at the bulb, through which could be passed a very small bougie. As the common methods of treatment had failed, I recommended him to have it divided by the double-lancetted stilette. The operation was accordingly performed with this instrument, and the strictured part was at once enlarged to the natural size of the canal. A No. 12 catheter was now introduced, and worn for five days afterwards. Steel dilators were passed on alternate days, for a month, at the expiration of which time he left my care, having lost all his distressing symp-

toms, and making water in a natural-sized stream.

The disease having so frequently returned, and caused such distressing symptoms, there is but little doubt that no other treatment would have answered. This case may be classed among a particular description of strictures, which might not improperly be termed the *Permanent Elastic Stricture*; that is to say, the structure of which the diseased part is composed is of that elastic nature that it somewhat resembles the consistence of Indian rubber girdle encircling the urethra. Hence, if a bougie be passed through a stricture of this description, and it is opened even to a considerable extent, yet it gradually closes up again. This disposition to contract may vary. It may occur immediately after the bougie is withdrawn, or in a few hours afterwards: a week may elapse, or a longer period, before the part wholly, or partially, closes up. This must depend upon the different degree of elasticity of the part. If it be highly elastic, then it immediately contracts; if not, this process gradually takes place. Examples of this description of stricture are of daily occurrence; and there is one case under my own observation at this present

time, in the person of a surgeon, who has a stricture (the hard substance of which can be felt externally between the finger and thumb) between two and three inches from the orifice. He never can make water without first passing a probe through the stricture to open it. Immediately after the withdrawal of this instrument, the urine flows. If, however, he wishes to void his urine an hour afterwards, the stricture has closed up, and he is obliged to pass the probe again to open it. This might by some be considered as spasm. I have no doubt, however, in my own mind, that it is mechanical obstruction. I have found in these cases, if the part be divided within the canal, the indurated substance composing the stricture becomes absorbed, and the disease does not return.

CASE LXX.

Three Strictures treated by the Lancetted Stilette, with a profuse discharge resembling Gonorrhœa.

1832.—Mr. H., a gentleman residing in Ireland, consulted me under the following circumstances. He had suffered for many years past the most distressing pain and irritation

in the urethra, attended by a profuse discharge resembling gonorrhœa: he had the greatest difficulty in passing his urine, and was teased by a constant inclination to do so; he had taken every description of medicine administered in such diseases, used injections, and had been treated for stricture by the common methods, without ever obtaining the slightest relief. Having been so long harassed from the above causes, he fell into a state of melancholy and nervous irritability, which sometimes almost amounted to insanity. On passing a bougie for him, I found the urethra was diseased, but more particularly in the anterior portion, almost throughout its whole course. There were strictures at two inches, three inches, and four inches from the orifice, and also one in the membranous portion. I operated on the two first at once, and kept the parts open by passing bougies. When the healing process had taken place, and when the contracted parts were enlarged to the natural size of the canal, the third stricture was divided; this also was kept open and enlarged, until the hardened substance of which it was formed was absorbed. The discharge ceased, and the pain and irritability of the urethra subsided.

As the stricture in the membranous portion would admit through it a bougie, and as I had reason to believe it was kept up from sympathy with the others, I recommended it to be treated by simple dilatation. It yielded to this method, and my patient returned back to his own country perfectly well.

I have since heard from him ; and he informed me, that from having been one of the most miserable men in existence, he is now one of the most happy.

A discharge from the urethra, like gleet, is one of the commonest symptoms of stricture ; but a profuse discharge, resembling gonorrhœa, is not so common. It no doubt arose, in this case, from so much disease being present in the anterior part of the urethra, and thus the irritation kept up a constant morbid secretion from the mucous membrane lining the canal. I have seen the same affection occasionally take place in other cases of stricture, and it has usually arisen from some excitement of the part, caused by irregularity of living, drinking more wine than the patient is in the habit of doing, &c. As I have re-

marked before, and as I have related in other cases, an affection of the mind is not an uncommon attendant on this disease.

CASE LXXI.

A Membrane connected with a false passage, and crossing the Urethra, divided.

LIEUT. H., who had come home an invalid from India, in consequence of having suffered from extravasation of urine and fistulous passages, which had greatly reduced him in health, applied to me for assistance. On examining him I found that he had a stricture nearly five inches from the orifice. The urine passed partly through the urethra, and partly through the fistulous passages, and there was a false passage a considerable length on the side of the urethra. A membrane separating the natural channel from the false passage, appeared to catch the point of the bougie, and turn it out of its right course. As it rarely and with difficulty went into the proper passage, I passed the stilette, and divided the membrane: from that time there was no obstruction; the fistulous passages healed up, and the patient went back to India perfectly well.

CASE LXXII.

Stricture three inches down the canal, and narrowing of the anterior part of the Urethra, divided.

THE first part of this case is described in the patient's own words :—

“ In 1823 I first suspected the existence of stricture, by frequent attacks of rigor, and contraction of the stream of urine ; health materially affected, and whenever exposed to the least chill, affected with total loss of appetite, attended with fever, and the kidneys so affected that the urine was black, and tinged with blood. After some months came up from Cambridge, and consulted an eminent London surgeon, who, upon passing a bougie, found a hard stricture to exist about three inches from the orifice. Not being able to afford time for treatment, returned to Cambridge, and came back to him in two months time ; could pass a small-sized bougie, and after remaining under him two or three weeks, was sent into the country, with directions to be cautious and temperate in diet, and an expressed hope that no further inconvenience would be experienced. The same effects from the disease, however, continued, and at the

end of 1824, having contracted gonorrhœa, was affected by formation of abscess in perineo, from which I suffered dreadfully, and which left three fistulous passages. Then under the hands of another eminent London surgeon, and remained so for two years off and on; the fistulous passages never cured till the expiration of that period, during which time several fresh formations of abscess kept taking place, and every endeavour made by cutting, &c. to pass them, and by use of bougie to remove the stricture, the cause of all my suffering, but no larger than No. 5 could ever be passed. By attention and constant use of this, kept pretty comfortable for two years, taking exercise, and equal liberties as other people, in hunting, shooting, &c., though the effect of rigor upon chill still continued. In 1828, feeling myself worse, returned to London to the same medical adviser, who, after nearly three months, sent me back into the country, having only passed a small No. 5 every other day: continued pretty comfortable for another two years, when, after return from the Continent, and a month's free living in London, had a renewal of inflammation, and consequent abscess in perineo, causing two fistulous passages, from which I suffered much for up-

wards of a twelvemonth before they could be permanently healed. Six months before they were so, put myself under the hands of another eminent London surgeon, who gave it as his opinion to be absolutely necessary to cure the stricture before we could hope to cure the fistulous passages ; for this purpose a catheter was ordered to be constantly worn, which was done with little intermission for six weeks, gradually increasing the size, when No. 10 could be passed ; but violent inflammation and swelled testicle taking place, all treatment was obliged to be suspended, and at the end of six weeks, when resumed, No. 5 was the largest sized instrument that could be passed ; by the steady use of which, and by great attention for three months, fistulous passages healed, and I remained comparatively well for another two years, when, feeling far from comfortable, another eminent London surgeon was consulted as to the propriety of having recourse to Mr. Stafford's treatment, by cutting, &c., but who said so much against it, and as in my case affording not the slightest hope of relief, that I again gave way to the mild treatment of general dilatation by bougies, with the external application of belladonna and mercurial ointment, and a medicine of hyoscyamus

and sarsaparilla. After four months, No. 8 could be passed, though with considerable resistance, and that not regularly; for twelve months the insertion of a bougie, once or twice a week, was never omitted, when the stricture evidently becoming worse, at times no instrument would pass into the bladder; and after a short period, No. 3 was the largest that could be introduced with any degree of facility, having at times great tendency to inflammation, and great pain and difficulty in voiding my urine. Upon this, after a few days' consideration, I determined, without further advice, to come again to London, and to put myself under Mr. Stafford." * * * * *

The case under my treatment is as follows:

Mr. ——— consulted me when he was in the state he has described. I found a permanent stricture three inches from the orifice, and the anterior part of the urethra considerably narrowed. I could only pass a No. 3 bougie, and afterwards divided the stricture with an armed catheter of the same size: this was effected without pain to the patient. On the following day he was able to pass a No. 7 steel dilator into the bladder. There still existed, how-

ever, a narrowness in the anterior part of the urethra ; I therefore, when the parts were sufficiently healed, widened it with another instrument, so as to be enabled at once to pass a No. 10 steel dilator. On making water the first time afterwards, he suffered considerable pain. In a fortnight, however, he was so well as to be enabled to pass a No 10 steel dilator without difficulty, and under these circumstances left London. I have heard from him twice since, and to use his own words, in his last letter of the 12th October, 1835—" I am truly happy in being able to communicate the fulfilment of your expectations, and the realization of my own hopes upon the subject. Every eighth day I have been punctual in observing the directions as to securing the ground gained while under your hands, and am glad to say that not only this has been done, but an advance made. The week after I left you I began to use a small No. 9 and 10, and I have to-day passed a full No. 11, with no greater degree of resistance than 10 met with while under your hand. I only returned from Yorkshire last week, where I have passed a most agreeable month among numerous valued friends, whose hospitable fare was not calculated to benefit any organic defect in the

human frame ; but I am glad to find that neither this nor the violent exercise which I occasionally took, occasioned me an hour's discomfort or uneasiness."

CASE LXXIII.

Stricture six inches from the orifice divided.

MR. D. consulted me for a stricture which he had been troubled with for many years. It was situated six inches from the orifice, and frequent attempts had been made to dilate it, but it always returned. I passed the lateral-bladed stilette, divided it, and in a month he was quite well.

CASE LXXIV.

A Contorted Passage divided.

MR. F. came to me with the anterior part of the urethra contorted. In his youth he had suffered both from syphilis and gonorrhœa. The syphilis had destroyed part of the glans penis, and the gonorrhœa had so contracted

the canal, that it would barely admit an instrument the size of a pin's point. Through this channel the urine passed drop by drop, and with excessive pain. I immediately opened the orifice which remained after the disease had destroyed the natural one; and in a day or two, in the meantime constantly passing bougies through the part I had opened, I enlarged the contracted part beyond it, in a straight line with the natural course of the urethra. In three weeks a No. 9 steel dilator could be passed into the bladder: the patient was then under the necessity of going into the country. I gave him directions, by following which his surgeon might be enabled to pursue the treatment.

CASE LXXV.

Stricture one inch and a half from the orifice divided.

MR. H., aged 56, had a contraction of the urethra, one inch and a half from the orifice, which continued an inch in length. It would only admit through it a No. 3 bougie, and he had for many years resorted to the common methods of treatment without benefit. I passed

the lateral-bladed stilette, and divided it; and in the course of a very few days he went home quite well.

CASE LXXVI.

Four Strictures divided.

MR. H. had been afflicted many years with a disease of the urethra: he had tried every means of relief without effect. When I saw him he had a discharge like gonorrhœa, and suffered from extreme irritability of mind. Upon examination, I found that he had a contracted orifice, a stricture two inches down the canal, another four inches, and another seven: from all these the most distressing symptoms had arisen. I proceeded to open the orifice to its natural size: in three or four days I divided the second stricture; in three or four more, the third; and in the course of a week or ten days, the last. I passed steel dilators. In the course of six weeks or two months he went home perfectly cured.

CASE LXXVII.

Stricture accompanied with symptoms of gonorrhœa, divided.

MR. W. C. had often suffered by discharge from the urethra, accompanied by a chordee, and every other symptom of violent gonorrhœa; and being treated for gonorrhœa, the complaint after continued attention disappeared. In February 1835, he had another attack more violent than any, accompanied with pains in loins and thighs, and with a violent inflammation in the ears; which always came on when the discharge from the urethra had been reduced by medicines taken for that purpose. Upon the suspicion that he was suffering from stricture, a bougie was introduced, and it was found that only a No. 3 could be passed. The urethra was in a very irritable state, attended by scalding whenever the patient made water. Finding that he experienced no relief from any other remedy, I recommended the division of the stricture by the lateral-bladed stilette. It was situated between three and four inches from the orifice. The operation was performed and attended with complete success, so much so that a No. 8 could be passed with ease. There remained, however, a narrowness in

the anterior part of the urethra, which was enlarged by the lateral-bladed stilette. He can now pass a No. 12 catheter without difficulty, and is perfectly well.

CASE LXXVIII.

Stricture producing an ill state of health, divided.

MR. L. C. was out of health for some time from indigestion, palpitation of the heart, and general debility. In addition to these, he had suffered from stricture of the urethra. The stricture was situated six inches from the orifice, and only a very small bougie could be passed; it was divided by the stilette, and cured; since which he has lost every symptom of dyspepsia, and is perfectly well. A No. 13 catheter can be passed without difficulty.

CASE LXXIX.

Four Strictures divided and cured.

MR. C. P., ætat. 56, was troubled with strictures of the urethra thirty-seven years. In the year 1797, he contracted a gonorrhœa

in the East Indies, which was succeeded by a gleet, and ultimately by stricture. On coming to England in 1799, he applied for medical aid. Bougies were used, by which he was much relieved: the stricture, however, returned in the course of two or three years, and the urethra became nearly closed. Caustic bougies were then applied, which gave relief; but after a time the patient was reduced to the condition of passing his water drop by drop, the effort being accompanied with much pain, cold perspiration, and shivering fits. In 1803 he was attacked by paralysis (June), occasioned, he firmly believes, by his sufferings from the stricture. He again applied for aid, and was relieved by passing small caustic bougies, and afterwards till within these two years he was in the habit of passing a small bougie; then the urethra became gradually closed, and he consulted me on the propriety of operating upon him with the lancetted stilettes.

On examining this gentleman I found the whole course of the urethra more or less diseased. Between one and two inches along the canal there was a contraction about half an inch in length, which would only admit through

it a small-sized bougie. I immediately divided it, and found another narrowing three inches from the orifice. I kept the divided part open until I could pass a No. 10 steel dilator. I then cut through the second stricture, and found a third at four inches and a half. The last stricture divided I treated as the other, and found a fourth seven inches. This I treated in the same manner as the others. When all the strictures had been divided, I introduced steel dilators, until I could pass a No. 12 with ease. All the distressing symptoms he laboured under vanished, and he makes water in a natural-sized stream. What is remarkable in this case is, that although the paralysis on the right side of the face was such, that the upper eyelid dropped completely over the eye, in such a manner that he could not see, yet after the irritation of the urethra had subsided, and the canal was freely opened, the muscles of the eyelid partially recovered their power, so as to enable him to raise it half over the globe of the eye. The muscles of the face also recovered their power in the same ratio.

This phenomenon proves that the brain is influenced by irritation of the urinary organs.

CONCLUSION.

The cases I have related are the evidence of the plan of treatment I proposed at the beginning of this work. It will be seen from them that there is no description of permanent stricture, in whatever part of the urethra it may be situated, to which the instruments I have invented may not be applied. I may therefore venture to express a hope that, for the sake of those who are afflicted with so distressing a malady, my suggestions will be received as the basis of a system of treatment that will be generally adopted.

EXPLANATION OF THE ENGRAVINGS.

FIGURE 1.—Double-lancetted Stilette (page 60.)

- a a*, Two rings for finger and thumb.
- b*, Screw.
- c*, Regulating Screw.
- d*, Hole for the wire to pass through.

FIGURE 2.

- a a*, Rings for finger and thumb.
- b c*, Screw and regulating screw.
- d*, Lancet projecting.
- e*, Aperture for the wire.

FIGURE 3.

- a*, Rings.
- b c*, Screw and regulating screw.
- d e*, Lancets projecting on each side of the wire.
- f f*, The wire.

FIGURE 4.—The Stilette.

- a*, Ring.
- b c*, Screw and regulating screw.
- d*, Spiral tube to bend to curve.
- e*, Lancets.
- f*, Shaft of the stilette.
- g g*, Wire.

FIGURE 5.--A straight Instrument of a similar description.

FIGURE 6.—Urethral Perforator, or Single-lancetted Stilette.

- a a*, The Rings for thumb and finger.
b c, Screw and regulating screw.
d, Lancet projecting.

FIGURE 7.—Stilette of Single-curved Lancetted Catheter.

- a*, Ring.
b c, Screws.
d, Spiral tube to bend to curve.
f, Lancet.

FIGURE 8.

- a a*, Rings.
b c, Screws.
d, Lancet projecting.

FIGURE 9.—Smallest-sized Catheter, with a wire passed through. The use of this instrument is to introduce the wire (which serves as a guide to the Double-lancetted Catheter, into the bladder. When introduced, the wire is pushed, and the Catheter (which is open at its point) withdrawn, by which the wire is left in the canal of the urethra.

The Lateral-bladed Stilette (page 62) the same as the others, only the blade coming out on the side.

THE END.

