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Graduation Thesis.

On "Organic Stricture of the Urethra"

G. Hogarth. Pringle.

Throughout the range of Surgery, no one complaint has perhaps given rise to so much angry discussion, nor for so long a period defied, when appearing in its most aggravated forms; all efforts for its removal or alleviation as Hygienic Stricture of the Urethra.

In fact up to the present time almost, its treatment has been considered as of the Opprobria of Surgery, and although on first thoughts it may appear but a trifling disease in comparison to others of apparently more pressing importance, and from the insidious nature of its progress at first be overlooked by a careless observer; yet the number of modes of treatment devised & recommended for its cure, and moreover the attention paid to the subject by every surgeon of celebrity, both in this country and also on the Continent are sufficient evidence not only of the distress, inco

venience I daresay which attend it, but also of their utter inability (until within the last few years to combat successfully those aggravated forms of the malady which every now & then present themselves to every surgeon of extensive practice

In the following pages I have endeavoured, by collating the opinions of most of those distinguished surgeons, who have devoted special attention to this subject, as to the nature, variety, causes, site &c of Hydrocele, to ascertain how far each different method of treatment, whether founded on mere theory, or supported by practical observation, that has been adopted is consistent with what we know as to its nature, cause &c, how far prejudice is in favour of their own mode of treatment as against that of others has influenced them, and how far the

results of the various methods have justified the confidence expressed in them by their proposers.

For much of the information as regards the opinions of French Surgeons I am indebted to the excellent Epitome given in last year's Graduation Thesis by Dr. David Keith. As regards cases I have abstained from quoting almost any, merely contenting myself by giving references to those works & journals in which they are recorded. Had I given many cases in full, it would have swelled this paper to an unreasonable extent, and been moreover but a repetition of what has been already again & again given publicity to the world.

First then as regards the treatment of syphilitic stricture; in this as indeed in every part of the subject we find great diversities of opinion not only in the works of older writers but also maintained at the present day. Many of the London

surgeons still hold the old opinion that the most common seat of stricture is posterior to the bulb and in the membranous portion of the canal, still it is now almost universally held elsewhere, that they never do occur beyond the bulb, and that their most common situation is at the bulb itself or about six inches from the orifice. Many mistakes have arisen from confounding spasmodic contractions of the walls of the urethra with organic stricture, as the former certainly exists most frequently in the membranous portion, as can be easily conceived if its anatomical relations are considered.

"Bell" "Civiale" and Lecomming again consider that many cases of so called stricture in the posterior part of the urethra, were mere cases of hypertrophy or disease of the prostate gland. This however is disputed by "Ricord" and Mons. Leroy D'Etiolles professes

to have in his possession a preparation, shewing a true cystic Thickening occurring in the membranous portion. Mr Guthrie also although he considers it very uncommon to have a permanent thickening posterior to the bulb, does not deny the possibility of its occurrence further back, but with them exceptions it seems to be pretty well agreed that the spongy part of the urethra is the seat of real thickening.

Next in frequency to the bulb as regards the seat of thickening, is the point of suspension of the penis about three and a half inches from the meatus, next at the neck of the glans, and lastly at the meatus itself; however the whole of the spongy portion seems liable to thickening, but these are the most common points, and where ever then the thickening exists in the canal one is invariably formed at the bulb.

As regards the nature of hypochondriasis, many opinions have been advanced. By those who include the Hypochondriasis as a form of Phthisis the most common management has been to divide them into Hypochondriacal Dyspepsia but as the Hypochondriasis is rather to be considered a concomitant affection than a form of Phthisis. I shall omit it entirely and consider the arrangement of Phthisis as determined by their proximate causes. These as in all other complaints may be divided into exciting and proximate the latter constituting the disease itself while the former is the exciter of the peculiar condition upon which this proximate cause depends.

And first of its exciting causes, Chief among these comes Leucorrhoea and the means used for its cure such as Injecting injections Dr. W. Wilson and Sir Astley Cooper considered the latter as the cause of Ninety Nine per cent of all

Stricture, but W. Wilson also declares that all Strictures arising from this cause occur less than half way between the orifice & bulb. as he considers it impossible to account for the injection causing a Stricture in the posterior part of the urethra, but the same objection would apply to Gonorrhoea, which has its seat almost invariably within an inch and a half of the orifice and yet we know that the Gonorrhoea can inoculate many of the most aggravated forms of this disease, Sir E. Home was so convinced of the mischief done by injections that he discarded them entirely, but at the same time he allows that many cases of Stricture are where no injections have been used at all. and Sir Benjamin Brodie considered that a Gonorrhoea allowed to run on, from not using injections is much more likely to induce Stricture than if it had been treated by a

mild injection. On the other hand John Hunter doubts whether Gonorrhoea is almost ever productive of Stricture he argues from the Spontaneous origin of Strictures in other mucous canals as the Oesophagus, rectum, Tracheal duct &c and also quotes a case of a boy who had a stricture from the time he was twelve years old, and another case occurring in a boy of four, but these cases do not disprove or at least are but negative facts against the theory of its frequent origin from Gonorrhoea. And as regards his argument concerning other mucous canals it is very doubtful whether he was correct in considering strictures in them as arising spontaneously Mons. Belpech states his firm belief in the agency of Gonorrhoea in its production, and "Bicord" & "Acton coincide with Sir Benjamin Brodie in considering the use of injections rather a safeguard against than a cause of

Stricture in cases of Gonorrhoea. According to "Phillips" (London Med.) Surg. Journal No 190) out of one hundred & nineteen cases, one hundred and seventeen had suffered from urethral discharges and in forty nine injections had been used; but there is one comfort & fallacy in the fact that a discharge from the urethra is one of the most common symptoms & or rather results of stricture, & this might easily be mistaken for a Gonorrhoea.

But besides Gonorrhoea there are many other causes, such as injuries from blows or falls on the perineum the unskilful use of the bougie especially the armed bougie is a fruitful source, frequent ejaculations connected has also been observed to induce stricture, and Home mentions a case having been brought on by a blister on the Perineum, Cantharides also when taken internally may cause stricture from its well known effects on the urinary organs. Mons. Civiale. Thinks

"W. Guthrie mentions rupture of the membrane from chordee as a frequent cause of stricture in the anterior parts of the urethra, this would be particularly likely to occur when "Heister's" treatment of chordee had been put in force by "bending the organ out straight"

Amussat & Mons Leroy D'Etiolles agree in ascribing many cases of Stricture to the effects of cauterization and Mons D'Etiolles ascribes some also to the practice of Scarification, in fact he seems to consider, that most cases except those where the cauterization & Scarification have been employed may be perfectly cured by the use of the bougie alone. M Liston considers that a tendency to the Lithic Diathesis has from the acrimony of the urine a great effect in causing Stricture, and it cannot be doubted that the inflammation caused by small calculi passing along the Urethra has frequently been an exciting cause.

Mons Civiale however says "the simple "contact of the urine, to which these "disorders & have been sometimes attributed, does not appear to me, even "tho' it last a long time, sufficient "to produce such effects for the urine "for the urine does not irritate the

"mucous membrane of the urethra at least in its normal condition", but it is well known that the mucous membrane of the urethra is not always in its normal condition, many things effect & alter it such as secretary habits, residence in warm climate excess in eating, drinking & sexual pleasures, and the urine also as Dr. Sutton supposes is frequently changed, so that I think we may safely conclude that even if it does not lay the actual foundation of Urethritis it at least greatly aggravates and hastens its progress. Gleet of the urethra has been supposed to induce Urethritis in some cases by causing a contraction of the fibres of the walls and it can scarcely be doubted that it not unfrequently acts as a predisposing cause at least. Having thus enumerated some of the principal exciting causes of Urethritis, let us proceed to consider what are the ac-

W. Guthrie mentions two cases in "each of
"which an excrescence grew from the side
"of the Urethra about half an inch
from the orifice"

true causes. The theory commonly entertained by the older writers on this subject, was that the obstruction was due to what they denominated "caruncles" meaning polypi or warty excrescences from the lining membrane; this doctrine has of course been proved to be, in almost all cases erroneous, yet it would seem that some very rare cases do arise from these growths. Hunter speaks of having seen two such cases. "Baillie" also mentions them. Mons Levisy states that they frequently occur in the fossa navicularis and Mons. "Lepelas" speaks of stricture arising from fleshy excrescences. Similar growths also we know occur in other mucous canals and M. Foget has lately recorded a case of the removal of a polypus "the size of a nut" from the female urethra (see Edin. Monthly Medical Journal Jan 1852). However if they do occur at all in the male urethra they are certainly very

true and clearly sees the cause of stricture. By far the most frequent form is an organized submucous deposit, with or without thickening of the mucous membrane itself, arising from some inflammatory process in the urethra; and the extent to which this deposit may extend is very variable. I have seen cases in which it seemed barely of the thickness of an ordinary piece of pack thread & others extending along the canal upwards of an inch and a half, and some authors describe strictures as occupying several inches of the canal. Mr Guthrie considers that whenever it exceeds ½ⁿ of an inch in extent it is from the implication of several distinct points of inflammation.

This submucous deposit speedily acquires a fibrous consistence and in many cases goes still further and assumes the appearance & hardness of cartilage. Mons. Civiale draws a

distinction between mere induration & fibrous degeneration; considering the latter to be comparatively rare and describes them as offering great resistance to the use of bougies in fact as <u>impalpable</u>, as regards the state of the mucous membrane when this deposit has taken place, M. Mercier declares that in his researches he has invariably found it of the thickened part smooth, fibrous and almost destitute of vascularity. M. Amussat also, who, although he does not consider this the most frequent form of stricture, yet describes it particularly mentions that the seat of the disease is <u>entirely</u> in the submucous and fibrous tissues, the membrane itself remaining unaltered; while on the other hand M. Malgaigne declares that the mucous membrane constantly participates in the disease. Mons. Civiale states that "the ~~[illegible]~~ mucous

"membrane of the spongy portion of the
"urethra is the part most liable to
"the mucous deposits of a fibrous or
"cartilaginous nature and along with
"this there is a decided thickening of
"the mucous membrane itself"

But the deposit may go a step further than becoming cartilaginous and according to Mr Syme assume the appearance & nature of the yellow contractile areolar tissue found in the middle coat of the large arteries & also in some of the ligaments of the body, and this form of the deposit Mr Syme ascribes those strictures which he has described as "distinguished by their
"tightness of contraction, the resilient
"nature of disposition displayed
"after dilatation and the great
"irritation produced by attempts
"to effect this". I can find no distinct account of this form of stricture in any other author on the British

a foreign, although many speak of a form resembling this, but without attempting to account for its formation, or to give any reason for its contractility & insensibility.

But besides this form of calculous deposit, we have a description of Stricture called by Authors the "Bridle Stricture" consisting of a bridle or film as it were, stretching across the Urethra, resembling the frenum of the Prepuce. M. Amussat who considers this by far the most frequent form of spasmodic Stricture accounts for its occurrence as follows, he says "a portion of the Mucous Membrane "becomes the seat of a limited en= "gorgement, which unless succeeded by "a distinct inflamation deprives the "Mucous Membrane of its ~~sensibility~~ ex= "tensibility, the urine meeting this point "and its progress being arrested, it pushes "forward and raises the Membrane "into a distinct elevation perfect be= "neath" (i.e on the floor of the Urethra)

and this forming what he calls a Valvular Stricture. These Bridle Strictures have also been ascribed to the expansion of a granulable lymph into the interior of the Urethra, in part or to the free surface of the Mucous Membrane; this, as we shall afterwards see, is highly improbable.

Sir Astley mentions a case of bridle stricture beginning so near the orifice that he could see it stretching like a film across the canal of the Urethra. (Page 93)

Mons. Ricord again ascribes the most frequent cause of the discharge in gleet to inflammation of the Mucous follicles of the Urethra, and Mons. Baumès considers the subsequent induration of these follicles, the usual cause of stricture, and he also speaks of carnosities existing in the Urethra, Mons. Lévêsi also speaks of callosities arising from the inflammation of these follicles and the same author states that in the case of submucous deposit, it may be en-

tirely confined to the spongy tissue and not encroach at all on the free surface of the urethra. If the opinion, which holds that some cases of stricture are due to inflammation and subsequent irritation of the follicles of the mucous membrane, be correct it will account for those species described by some authors in which the thickening occurred only on one side of the passage and the canal of the urethra was pushed over in the opposite direction.

Sir Everard Home, Wilson and others considered the canal of the urethra to be surrounded by a set of muscular fibres, to the ~~those~~ irritable contraction of which they attributed many cases of stricture, but as Mr. Guthrie remarks "in the membranous part of the urethra, which is known "to be surrounded by a very powerful compressor muscle. The advocates for muscular "contraction, admit that permanent contraction does not take place usually; and if "it does not take place there, it is unlikely

"be difficult to prove why it should occ=
"cur from that cause any where else"
Ulcers in the Urethra & the cicatrices from
the healing of these ulcers have been men=
tioned by many authors as a cause of
Stricture, "Viale" speaks of having seen
several cases in which the mucous mem=
brane was perforated by ulcers like a
sieve and he quotes Sir C. Bell as an
authority on the same subject. - Hunter
entirely ~~denies~~ denies their occurrence
but Baillie mentions having met with
them altho' very rarely. We certainly
do meet with cicatrices from ulcers
at the orifice of the Urethra. if they
can be properly called a Stricture.
and Ricord mentions having found
ulcers of venereal virus in the urethra
in of the canal, "Mott" mentions a
case in which the membrane was
ulcerated in several points, and "Hey"
and "Bonnet" have recorded cases in which
ulcers having their edges elevated, and their
surface presenting a sanious appearance

were the uppermost cause of stricture
(see Lecture Page 115)

False membranes as they are called effused on the free surface of the mucous membrane, have been described by Dennes and are also mentioned by Dupuytren, but such an effusion if it happen at all must be excessively rare, because we know that there is very little tendency to the effusion of organizable lymph on the free surface of mucous membranes, and moreover in the urethra from the continued passage of urine along the canal, it is not easy to imagine the possibility of the formation of a false membrane.

Besides the different forms of stricture I have already mentioned, others have been described. M. Leroy D'Etiolles has no less than nine varieties all distinct from one another. In addition to those I have enumerated, he speaks of the "Tempus" "Varicose" and Turgescent or Erectile strictures. The varicose & Turgescent form

are however probably synonimous and identical with what has been described by other writers as a Boemorrhoidal state of the vessels of the lining membrane. M. Amussat considers this congested state of the urethra as a not unfrequent cause of stricture and to it he ascribes those cases, such as that of Jean Jacques Rousseau, in whom although stricture existed during life, no trace could be found of it after death. "Actor" speaks of stricture caused by Scrofula & Carcinoma, but surely that can hardly be called a mere stricture in which, not only the urethra, but the whole tissues of the organ are involved and partly disorganized by a malignant disease.

According to Jn S. Hunt gout not only effects stricture but may even produce them or rather cause their reappearance after having been apparently cured. But in such cases the probability is that the good living to which gout may usually be traced had a good deal to do with

the return of the stricture —

Regarding the <u>number</u> of strictures that may occur together in the urethra there have been many discordant statements. Ducamp "with whom Ricord" agrees limits it to two while Hunter speaks of six and Lallemand of seven occurring in the same urethra, but this is really a matter of very little moment; what is important however to recollect, is, that where a number do so concur there is almost invariably one at the bulb, and moreover that we never find in the same urethra, more than one of that variety described by Mons Civiale as fibrous degenerations by Mr. Syme as contractile or irritable, and that one is in general but <u>not always</u> the most posterior; and again which is also important as I shall afterwards have occasion to allude to, all the others seem to depend upon it and commonly disappear when it is cured. Strictures very rarely occur

at an advanced age; when we have obstruction to the flow of urine in very old men it is generally dependent on enlargement of the prostate (Bloom in the urinary organs)

We now proceed to consider the symptoms and results of stricture of the urethra. An incipient stricture may be progressing for some time unnoticed by the patient, so gradual & slow are the first approaches; generally the first sign that alarms him is the diminution in the stream of urine, but even this comes on so gradually (unless when a spasmodic attack supervenes causing sudden and complete retention) that frequently for a considerable time it fails to attract his notice, until the diminution becomes so great as to alarm and in connection with it he finds not only a tendency to frequent micturition, (especially in the night season), but also an inability to void his urine; a few drops at a time may be occa-

sionally a considerable quantity, waking & dribbling away some time afterwards, soiling his linen and otherwise causing great discomfort and irritation. Another symptom that occurs early in the disease is the forked & twisted form of the stream of urine, particularly towards the end of micturition; but although these symptoms are characteristic, we must not conclude from their appearance merely, that the patient is labouring under stricture, many other affections and conditions modify and alter the flow of urine, temperature for instance has a great influence upon it. and this is seen in patients actually labouring under stricture who are frequently utterly unable to void their urine whilst in the open air, and yet make water with the greatest ease on entering a warm apartment; The misshapen and twisted stream again may be caused by paralysis or partial loss of power over the bladder and expelling muscles of the urethra; and "actor"

states that it may also be produced by an alteration in the relative positions of the canal and its meatus ("Acton" Page 120)

Persons labouring under stricture also generally complain of an uneasy feeling in the loins and perineum, of aching of the limbs &c, the pain in the loins frequently runs down the inside of the left thigh, curiously enough very seldom affecting the right. (See "Guthrie" Page 105). Besides retention of urine, inability to pass the semen during venereal coitus, has been mentioned as a symptom; and also nocturnal emissions, arising from the irritable state of the whole genito-urinary system; but retention of the semen and its regurgitation into the bladder can only occur in the most aggravated cases; according to Sir E. Home it only happens, when the act of coitus itself is unusually prolonged.

Another very common symptom of

a diseasing stricture, is the appearance of a gleety discharge from the urethra, Ricord indeed considers this an infallible sign, but that is probably going a good deal too far, as the gleet we know very frequently exists long before the stricture and in fact is a most frequent cause of it. (Hence the benefit obtained by occasionally passing a bougie in cases of old standing gleet). Nevertheless it is a symptom which very commonly occurs, as may be easily conceived when we consider the altered and abnormal condition of the lining membrane of the urethra and of the whole uropoietic apparatus. This gleety discharge arising from the presence of a stricture, may be distinguished from the gonorrhoeal flow with which it is apt to be confounded, from its being unprovoked by sexual intercourse, by the following characters; the discharge from stricture comes on immediately, is attended with but little pain

and usually disappears spontaneously in a few days, while sometimes generally a period of latency, is of longer continuance, and attended at first by great pain ("Smith" on Stricture) Sir B. Brodie points out that the seat of this discharge is invariably anterior to the stricture itself, be it whatever be the site of the latter, the discharge arises within two inches of the orifice, in fact from the place to which the patient almost invariably refers the feeling of pain. W. Whitely who seems to attach great importance to this question, declares it arises entirely from the stricture itself, while Mr. Liston believed it proceeded from the stricture and the parts anterior to it, others have ascribed its origin entirely to enlarged prostate but this M. Civiale wholly denies, and it is well known that we have many cases of stricture accompanied by this discharge, in which the pros-

tate is of its normal size and quite unaf-
fected.

The canal of the urethra being, usually, as we should expect narrowed in front of the obstruction (though by no means always so) posterior to the stricture it is commonly dilated sometimes forming a cyst of considerable size, in one case mentioned by Sir Benjamin Brodie, a cyst occurred of such magnitude as to form when distended by urine, a swelling in the perineum of the size of an orange. Mr. Guthrie however considers that this dilatation is by no means an invariable occurrence, and that it is most frequently seen, where there is but one stricture and that situated in the membranous portion of the urethra. It is in this situation also viz posterior to the strictured part, that minor abscess, according to Mr. Syme, abscesses unconnected at first, with the urethra and merely dependent on the local irritation, may arise, terminating in fistulous openings

W. Liston has recorded the case of a man
labouring under stricture, and whom he
describes as having "the Perineum com-
"pletely occupied by large fistulæ, into
"which the fingers might be inserted
"and through which the urine escaped in
"all directions"

M. Dupuytren states that the edges of these
urinary fistulæ secrete a matter identical in
composition with Cholesterine

with the perineum, and there opening
this cause great misery to the patient
by allowing the escape of urine and
even semen by the abnormal outlets.
Calculi also have been known to
form in the dilated portion, causing
great distress and aggravating all the
symptoms.

Next the bladder itself becomes implicated, from the resistance it meets with in expelling the urine, its muscular coat becomes hypertrophied, sometimes to such an extent as to allow of separation of the fasciculi and protrusion of the mucous membrane through the interstices, forming cysts, which sometimes attain an enormous size; the mucous membrane also becomes hypertrophied and according to Sir Benjamin Brodie takes on a chronic form of inflammatory action, secreting a copy viscid mucous and sometimes even purulent matter, differing however in appearance from the gleety discharge formerly pro-

tion of. Dr Benjamin also speaks of the deposition of lymph. and in some cases of calculous matter encrusting the coats of the bladder. Along with a actual thickening of its walls, there is also a diminution of the dimensions of this viscus so that the frequency of micturition which in the first instance arises merely from the existing irritation, at last becomes perfectly necessary from the absolute incapacity of the bladder in its now contracted state, to contain the normal quantity of urine. The prostate is also frequently affected & may become inflamed. the orifices of its ducts being obstructed and abscesses forming in its neighbourhood, which may either, like the others open into the perineum or terminate by fistulous communication with the rectum.

As the disease progresses, the ureters also sympathize in the general disorder, sometimes becoming accumulated

* And this seems to be one way by which the disease may terminate fatally.

and enormously dilated, as well seen in the case recorded by Mr Liston in his work on Operative Surgery. The kidneys too come to be involved, the pelvis of the kidney becoming dilated, the lining membrane secreting pus in abundance even the whole of the substance of the organ being destroyed. A case of this is recorded in the London Medical & Surgical Journal for 1835 in which the right kidney was found, as a result of stricture in the urethra, diminished by one half.*

Sir Everard Home mentions that when the bladder is thus affected the urine loses its natural odour and acquires a peculiar flavour and a faint smell in a slight degree similar to that communicated to the urine by eating Asparagus. (Home on Stricture Vol I Page 66)

Sometimes inflammation of the lymphatics of the groin is induced by stricture independently of any venereal disease and this is important to remember

Hydrocele is said to be particularly liable
to result from tincture in hot climates

for it attended by the pleety discharge formerly mentioned, it might when taken conjointly be mistaken for Gonorrhoea and lead to a very erroneous and injurious system of treatment.

The testicles also are not unfrequently implicated becoming enlarged & painful in fact undergoing an attack of Orchitis only differing from the ordinary form in resisting all treatment so long as the stricture, the exciting cause, remains. I have also seen a case of Hydrocele with chronic enlargement of the testicles depending solely on the existence of a stricture and disappearing as the latter yielded to treatment.

The rectum, as is to be expected, is likewise frequently involved, fissures and ulcers forming, or prolapsus being induced by the straining the patient makes in his attempts to empty his bladder. Haemorrhoids which I formerly mentioned as a cause are also not uncommonly a result of

Stricture; and the thinning which in-
dicates these affections of the rectum
has been known in some cases to have
also the effect of bringing on Hemia.

In addition to these changes there are
a few minor & concurrent symptoms
which assist us in determining the
~~Exist~~ existence of a stricture; Pain in
the urethra is one, it is generally felt
in the same situation as the pain in
Gonorrhoea and Some mentions this
as a frequent source of what he con-
siders the fallacy of attributing most
of stricture cases, to the consequences of Gonorrhoea.
It has been remarked that when the Pros-
tate becomes enlarged without being
inflamed, it may give for a time at
least great relief to the feeling of pain
and irritation experienced in the urethra
by acting as an obstacle to the flow
of urine towards the stricture part,
We have occasionally the pain referred
to the point of the Penis, which are
often found in cases of stricture, presenting

elongated
thick precipitate appearance and character
which has been considered pathognomonic
of calculus in vesica. Occasionally,
from the local irritation, there
causes painful erections which are
sometimes attended by a discharge of
blood, proceeding doubtless from the
congested state of the urethral mucous
lining.

Then along with all these disorders
and alterations, many of the internal
organs are implicated, and especially
the liver, which secretes bile in unusual
quantity and of abnormal appearance and
qualities. Nervous affections also, in
some cases smouldering even to delirium
have been observed, but probably in
many of these cases at least the head
symptoms may be referred to imper-
fect elimination of the elements of the
urine in consequence of diminution and
disease of the kidneys. Paroxysms
resembling ague likewise occur
and Dr Venot mentions Epilepsy, Coat-

and also Erysipelas as being occasionally caused by Strichnine. In this as in every other disease almost we must be on our guard against Hypochondriacs who may fancy they have many of these symptoms of Strichnine, and must recollect that persons who have led what is commonly called a free life will often present themselves with symptoms of disorder in others organs which they refer to the Urethra although no disease really exist there -

Ulceration of the tongue has been noticed as being brought on by Strichnine, but this I fancy like Erysipelas is more properly a secondary affection arising from the deranged state in which the Nervous organs are usually found to be. Dr Robertson had a patient in the Royal Infirmary, in whom, he attributed the Paraplegia of the lower half of the body, under which the man laboured, to the existence of an organic Strichnine in the Urethra -

But although all these symptoms point out to us or at least lead us to suspect the existence of Stricture in some part of the urethra, none of them can be relied on with certainty, and it is only by exploration by means of bougies, that we can arrive at a true conviction of its presence. In making use of these instruments some attention must be paid to their size, form, material &c And in the first place it has been greatly disputed as to whether gum or metallic bougies should receive the preference. It has been urged in favour of the flexible bougie that they are less likely to alarm the patient and cause less irritation in the passage. They have also been extolled as giving an imprint of the Stricture on their soft surface shewing its size & nature. But this last reason for employing them has been justly characterized as frivolous for even if it were able to give us any information as to the state of the Stricture; which is exceedingly doubtful, such knowledge would assist us very little in treatment

and as regards the statements, that it is less alarming & irritating to the patient, any such advantages are abundantly counterbalanced, by the very insufficient use we can make of the instrument, since from its flexibility it can give us no accurate information as to the the <u>existence</u> or extent of the deposit; nor indeed have we any certainty of its having entered the stricture part; This is particularly the case where several false passages exist, as we then find we cannot guide the point of the instrument, with any certainty in the normal direction of the urethra. "Chopart" mentioned a case in which he believed he had passed a flexible bougie, completely through a stricture, into the bladder and was surprised a few hours afterwards to find the extremity of the instrument at the orifice of the urethra, it having recoiled at the stricture and bent completely back upon itself, with no discomfort and irritation to the patient

× Mons. Belpeau considers the use of the "plastic" bougie very liable to deceive the practitioner as any contact with a fold of mucous membrane or a vesical movement, would give identically the same mark as a stricture would. M. Perrin also and M. Amussat agree with Belpeau in condemning its employment; while even those surgeons as M. Civiale and M. Leroy who make use of it, admit that in many cases it does not succeed, and they seem to employ it only to ascertain the form of the stricture previous to applying the armed bougie.

can easily be misapprehended. But the flexible bougie not only fails to give us any correct information as to the state of affairs in the urethra, but it may even deceive us "particularly at the bulb, where the "bougie will receive an impression as of "a stricture although none exist." (Acton) ×

Its use has been recommended by some surgeons, in cases, where the obstruction only exists at one side of the canal; because, they say, in such cases, from its flexibility it may be coaxed round the opposing part; but such cases if they exist at all, are very rare and I have no doubt are more able to be treated in the ordinary manner by the metallic bougie. Unless when the patient obstinately refuse to allow the use of the metallic bougie, the latter should be preferred in all cases, as giving us by far the most satisfactory evidence as to the state of the parts with which it comes in contact.

The tip of the instrument is also

of importance, because if too large one
of too small a size it is very liable to
be caught in one of the many recesses
existing in the lining membrane of the
urethra and so simulating the appear=
ance of a stricture, and moreover if a
very small instrument were employ=
ed, it might pass through a stricture
of no great degree of contraction, without
marking its existence; On the other
hand, if of too large a size for the ca=
libre of the urethra, it might give
the idea of an organic stricture where
none existed. Taking then a bougie of
intermediate size, remembering that
the orifice of the urethra (unless contracted
from the cicatrix of some sore) is a pretty
good gauge of the size of the canal,
it must be passed with great caution
until the obstruction, if there be one,
is arrived at, then if it pass with ease
a larger may be substituted, & if too
large, and after repeated attempts, made
with all gentleness however, not to hurt

It has been stated, that when employing an instrument of the smallest size, its insertion should be made at mid-day, as patients have remarked, that it passes more easily then than early in the morning.

succeed in getting it through, a catheter may be tried till one is found of the proper size. We must beware also of being misled by the obstruction to wh^t^ he may meet with by the inexperienced operator at the bend of the penis and again while passing the triangular ligament. M. Leiston also mentions, that in performing what is called "Le tour de maitre" the point of the instrument is apt, if the surgeon have had little practice, to be caught in a fold of mucous membrane giving a sensation strongly resembling that felt on encountering a stricture. Mucous deposit in the canal of the penis and enlarged Prostate have been spoken of as liable to deceive, but as formerly stated, Organic Stricture never exists posterior to the bulb, consequently the latter of the two at least, is not much calculated to mislead the surgeon.

The existence of false passages is apt to obscure the case and puzzle the operator. M. Guthrie, in reference to the diagnosis

of there that a channel passing downwards from the urethra is much more likely to be a false than the true one. Spasmodic contraction of the urethra is easily recognized by its attendant symptoms. M. Amussat has invented an instrument, consisting of a catheter from the extremity of which, by means of a spring, a button is made to project, after the instrument has passed a considerable way along the urethra, then by withdrawing the catheter he declares he can discover strictures not recognisable by other means. The advantages however of this measure seem very obvious, and surely a stricture that can only be detected in this way cannot be productive of so much annoyance, as to call for surgical interference. In giving a couple considerable bleeding may arise if the obstruction be of the fungous-vascular kind mentioned by some French authors and this appearance of bleeding accompanied by a pulsating

constriction has been described as symptomatic of those excrescences which have been supposed to exist as one cause of stricture ("action") ("Guthrie") —, the latter authority also states "that sudden pain "during the passage of the bougie accompanied by a flow of blood is diagnostic of the existence of an ulcer in the urethra.

Of course before using the bougie it must be well warmed and greased & oiled, and as regards posture, the passage of the instrument is often facilitated by having the patient standing. If the stricture be easily dilatable consisting of a simple submucous deposit the bougie will probably proceed after a little pressure but if much pain be caused during the passage of the bougie, the stricture will in all likelihood, turn out one of the irritable type and it will be found that frequent calls to make water is one of the symptoms — If on making pressure on the bougie and then and

dearly with showing the presence, the instrument be found to recruit, it is a sign that it has not entered the structure, if it had it would remain, held, as it were in the stricture, and on attempting to withdraw the extremity would be found to be tightly grasped.

When a stricture of a dense nature occurs in the part of the urethra anterior to the scrotum, it can be felt externally when a sound is passed through it and "during the erectile "state this hardened part is not "augmented in size, although the whole "body is distended before and behind "it." (Guthrie Page 78)

Of the Treatment of Spasmic Stricture of the Urethra.

In the preceding pages having treated as briefly as possible of the varieties, causes, situation and results of spasmic stricture of the urethra, I shall now proceed shortly to consider the various

modes of treatment, which have been proposed for its relief and permanent cure; it is however only within the last very few years, that any plan has been devised capable in all cases of effecting a complete and radical cure; for although undoubtedly in the majority of cases seen and treated in time, the methods previously employed were sufficient, at least to relieve if not to produce permanent benefit, yet every surgeon of any considerable experience, has encountered and has every now and then meeting with obstinate strictures of long standing, which defied every mode of treatment then in vogue -

In speaking of the treatment I shall follow the arrangement adopted by Mr. Syme in his "Principles" and divide the subject into three heads viz, Treatment by dilatation, Treatment by cutting and Treatment by incision; Treatment by the caustic might indeed have been omitted here it not, that altho' now

generally discountenanced by the profession as not only insufficient but as highly dangerous in fact as tending rather to aggravate the disease, than give any alleviation, yet as it still retains some supporters in London & Paris, it will be as well to consider it in its turn.

Point, then of treatment by dilatation and under this head three distinct and different methods may be described viz: 1st Introduction of a bougie at regular intervals 2nd By retaining a bougie in the urethra for twenty four hours or even longer, and 3d By means of "dilators". Another variety has been described as the "mean of tunnelling", but in reality, as regards both theory and effect this is a mere modification of the first division.

Although if a stricture of the urethra be allowed to go on undressed, the difficulty of remedying it will be proportionately greater, and the sooner it is attended to the better, after it really has formed yet it would be a mistake to begin

to apply dilatation, whenever we see the stream of urine diminished in becoming twisted and forked, because these symptoms in their first appearance, are probably dependent upon a turgid & congested state of the mucous membrane, in which case the passing of a bougie would aggravate, rather than rectify, the abnormal condition of the parts, and for the relief of which, some slight general antiphlogistics combined with the Hip bath &c might be sufficient; no doubt this treatment will be found adequate in the removal in a vast number of cases, but we should not, at least, proceed to the use of the bougie, until all signs of inflammation, & ulceration have disappeared from the passages.

Certainly of all means employed to remedy this intractable complaint, dilatation by the repeated use of bougies, enjoys the pre-eminency for safety and simplicity: The first writers on diseases of the urethra seem to have made use of this method, as Foote mentions that "Alexander Trojanus Petronius

Castle in 1565 speaks of "cleaning out the
urethra with a wax candle" & some such in-
"strument"; thick rods of lead were also
used besmeared with pitch &c and
Hunter states that these leaden bougies were
employed so late as 1750, when a ~~leaden~~
bougie of better form and material
was invented, and since then various
improvements have been introduced from
time to time; at the present day the
~~silken~~ one I formerly described as used
for exploring the urethra is also employ-
ed for the cure of the stricture. But al-
though this latter has been, and is now
so universally practised, much diver-
gency of opinion still remains as to
the best mode of applying it; more also
as to the manner in which it acts bene-
ficially on the diseased part -

By Dr. E. Home the bougie was considered
to act only as a wedge mechanically di-
lating the contracted portion, John Hunter
held the same opinion, but he also
states that "their ultimate effect is not
"always so simple as that of a wedge on

"inanimate matter" and he rightly attacked that the pressure gave rise to a vital action in the tissues, which is the opinion now held; he considered the time the bougie should be retained, ought to be judged of by its effects on the patient "Arnott" describes the action of the bougie to absorption and "Eaton" holds that it acts in no less than three ways 1st By stimulating absorption, secondly by causing a discharge of pus from the urethra and thirdly by causing ulceration. Now it is to the benefit of the patient by causing a purulent discharge from the part does not need appear; and the production of ulceration can hardly be a desideratum in our treatment of stricture. As regards the time the the bougie should remain in the urethra surgeons differ greatly, some recommending ten twenty or even thirty minutes while others especially Mr. Syme limit it to a few seconds; the latter has been characterized by his opponents as frivolous but when we consider that the benefit

we are to obtain ruins from absorption and that although we can obtain this by pressure yet pressure alone a too long continued will defeat its own purpose, it will be evident that its momentary application, will not only be effectual, but will possess the peculiar advantages of neither doing too much, nor endangering the patients life. Mr. Syme recommends that the application should be repeated at intervals of not less than four days, at least at first, and he generally introduces three at each sitting, one of them being the largest he had introduced on the last occasion. Most of the French surgeons however, who employ dilatation, retain the bougie fifteen or twenty minutes. "Velpeau" indeed as long as half an hour. On the other hand Mr. Lisfranc & Cooper disapproved of its being allowed to remain any great length of time and so does Mr. Wilson although he allows it to be retained longer than Mr. Syme recommends.

Mr. Wilson advocates the use of a straight con-

cal bougie for very tight stictures and M. Civiale employs one much of the same description. According to Velpeau Mayo commences by using a full sized bougie, his principle being "that the tighter the stricture the larger should be the bougie", and this practice seems partly advocated by M. Leroy & M. Lallemand. Sometimes the passage of the bougie may be stopped by a spasm, but according to Hunter this may generally be removed by throwing cold water over the glans penis and also by the perineum; if the patient be peculiarly sensitive to pain, an opiate may be given, previous to the introduction of the instrument, either by the mouth or rectum.

There is often however difficulty in passing the stricture itself, especially where it is of very small calibre or the passage is either twisted or complicated by false passages, the result of careless or unskilful use of the bougie, and it is in such cases that the process called

"tunnelling" may be put in force; this consists in applying pressure by means of a bougie on the stricture, upon the same principle, to excite absorption, this is often a work of time. Victor" speaks of having required six weeks; but if cautiously used it may be very advantageous. Dr. Guthrie says he has treated cases with the greatest success by tying down on the stricture an elastic bougie he also mentions that Dr Physick followed the same plan. "Hunter" declares "that if the end of a bougie no matter "how small be introduced into the stricture the cure is in our power"

The next mode of applying dilatation of which I must speak is the permanent, a plan in which continued pressure is applied by means of a catheter tied into the bladder. In many cases the progress made by the intermittent dilatation is so slow, that the patient becomes wearied and if nothing else contraindicate its employment, he may be gratified by a trial of the permanent method. The catheter selected should be the la-

gent that can be passed through the stricture; after its introduction it is secured by tapes (having a plug to prevent the escape of urine), and is retained in this situation for ten, eighteen, twenty four or it may be thirty hours according to the feelings of the patient; at first there is considerable irritation & pain produced, these however decline, a profuse discharge follows, and the catheter which was previously tightly purged with now be found quite loose in the urethra; if the patient complains much of pain at the commencement anodynes may be given. When the instrument is found loose, it must be withdrawn and a larger introduced and then the intermittent dilatation may be resumed with better prospect of success. Such is the principle of permanent dilatation a method now but seldom practised, as on account of the greater irritation it causes, ~~the generality~~ surgeons generally prefer the slower but safer process of gradually temporary introduction.

M. Civiale deprecates its use, except in

cases of retention recent, cases threatening retention and where the patient suffers much from spasmic efforts during micturition; but after employing the "bonde à demeure" he always completes the treatment by the intermittent plan. M. Leroy d'Etiolles however advocates this method and employs two modes of permanent dilatation the slow or ordinary form and the rapid which consists in trying in a catheter for twenty or thirty hours and then passing a bougie increasing in size every eighteen hours thus performing full dilatation in a few days and this he declares from his own experience to be safer than the more tedious plan. On the other hand Mons. "Perrève" condemns this method, unconditionally as dangerous and useless characterizing it as "the torture" "a mode "of treatment truly incendiary" and in these views he is seconded by Mons. "Bergin", while Velpeau seems to adopt a sort of intermediate plan retaining the bougie at least half an hour and

sometimes several hours.

In using a catheter tied into the bladder, it should never be retained more than forty eight hours, without changing, lest it should become encrusted with calculous deposits, to the formation of which the diseased state of the coats of the bladder, often caused by the stricture, predisposes in a marked degree.

A third method of applying dilatation is by means of "Dilators" of various forms, such as the complicated apparatus described by W. Arnott, and the lately invented instruments of W. Wakely

The first description of anything of the sort is that employed by the ancient Egyptians, mentioned by W. Leyaston who made use of the small gut of some animal which they distended with air after introducing it into the urethra; and many modifications and improvements, as well as instruments of a totally different description, but proposed to act on the same principle have been made. But little used. W. Guthrie has described an

"Wilson" mentions a rather curious & novel way of applying dilatation practised by one "Bonningshausen" a German who simply directed his patients to distend their urethra with urine, during micturition, by endeavouring to expel it while the compressed the point of the penis

instrument of this kind, which he tried but found unavailing. As for W. Atkinson's instruments, I have never seen them employed or has anything particular been recorded of them since their first introduction; like the other forms of dilators they seem to have fallen into disuse and in fact all these instruments appear to be but needless complications, for as one author ("Macilwain") justly observes of them "Their employment is impossible, except when the stricture will admit the entrance of a bougie or other instrument of small size, in which case the dilator is unnecessary, as the other instruments will operate with greater facility & certainty"

Of course in carrying out the principles of dilatation, by whichever of these methods we select, we must go on, until we have dilated the urethra to its full extent, but no further, not that we are to desist from the use of bougies altogether, but we must take care not to use a bougie size then

the normal calibre of the urethra. However for weeks and even months after the stricture is to all appearance cured, the bougie must be passed at frequent intervals to maintain the dilatation.

But even with all these precautions the stricture will too often return perhaps in a more aggravated form. John Hunter considers that no man who has once had a stricture can safely consider it cured. M. Amussat declares the treatment by dilatation to be only palliative. M. Lallemand speaks of it as only keeping the disease at bay. ~~M. Civiale~~ and M. Civiale considers intermittent dilatation to be dangerous, inconvenient from its duration and giving no permanent relief. In addition to this although the simplest form of treatment it is by no means free from danger, Sir Benjamin Brodie mentions a case in which after introducing a "small gum "catheter" a rigor ensued, the patient "then remained affected with fever attend- "ed by a Rheumatic inflammation of the "muscles of the back of the neck, from the

"effects of the bite the head not recovered
"a long time afterwards and I believe
"his neck is stiff and drawn to one side
"even to the present day". Some patients,
especially those from hot climates, are
liable to be seized with paroxysms re-
sembling those of Ague, and requiring large
doses of Quinine for their relief.
W. Byrne also mentions "Herpetic eruptions
"on the lips and face, painful swelling of
"the testicle, and abscess of the perineum"
as "common local derangements resulting
"from the constitutional disturbance so
"produced" and there unfortunate events
are still more liable to ensue if the
patient expose himself imprudently, to
cold or injure himself by over exercise
especially on horseback. W. Byrne
has recorded two fatal cases from the
passing of the bougie, constitutional
disturbance having arisen terminat-
ing in suppuration of the hip joint.
Moreover in cases where more than
one stricture exists in the urethra; the
bougie is comparatively speaking useless,

because as we have already seen, these most certain depend on the presence of one furthest back, and while they prevent any remedial means being employed upon it; so long as it persists they are themselves incapable of removal. Besides there are many cases occurring in every surgeons practice, for the relief of which the bougie is totally incompetent, such are the dense cartilaginous form of simple stricture and also those the irritable, contractile form described by W. Syme, in which if even the irritable state of the stricture permitted the frequent use of bougies and dilatation could be carried to its fullest extent; in less than a week, it may be in a few hours; it will, from its resilient nature have become as contracted and intractable as it was before. To remedy such cases some more potent measure must be employed, we have our choice of two. Cauterization & Incision which are we not to adopt, we shall be better able to decide when the respective

merits of each shall have been considered

The treatment of Strictures of the Urethra by Escharotics was not unknown apparently to the Ancients "Pethonius" I before mentioned as having employed the Bougie; for the Wants of injecting mild corosives "in a case of a caruncle" that whose Paré describes a process of spreading corosive ointment on Rags, which were wound around a wax Candle and so introduced. The same practice according to "Foote" was followed by "Wiseman" Surgeon to Charles the 2d Cooper mentions that Henry the IV^th^ of France was treated by Bougies containing Arsenic. But John Hunter was the first Surgeon in this country, who regularly employed the Nitrate of Silver, as a means of treating Stricture; his first attempt however was with the Bichloride of Mercury; But his principle in the use of Caustics was rather that of altering the Spasmodic condition of the

stricture first; then of actually destroying it; because as soon as he succeeded in getting an instrument through the stricture, he laid aside his caustic and commenced treating it by occasional dilatation.

Whereas Sir Everard Home who adopted his method, carried it so far, that the only cases he speaks of in his works as those in which the caustic ought not to be used are cases in which there really was no stricture but merely a spasmodic contraction. Nevertheless Mr. Hatchett succeeded in getting a step further and introduced the use of the Potass-fusa, a proposal on which Mr. Cooper well remarks that he "never saw any recommendation but that of novelty" and which would doubtless long ere this have fallen into complete disuse, had not "Wadd's work" on the curative powers of Potassa fusa in stricture of the urethra" lately revived this practice

In S. Home's mode of applying the nitrate of silver, was to insert a small portion of the caustic into the end of a

bougie and pass it down to the seat of the constriction, having previously passed down an instrument to clear the way, and his mode seems with cases he professes to have cured in this manner. Among the advantages which he attributes to the use of lunar caustic, one that he particularly mentions is the power he ascribes to it of coagulating the substance it destroys: now according to the observation of most surgeons nitrate of silver has very little power as a real escharotic; and as to coagulating the substance it destroys it is difficult to perceive in what manner, that can benefit the patient or expedite his cure. Wilson who also recommends the use of the caustic in fleshy cases in preference to the bougie, declares its application to be attended with less inflammation and pain, than the latter, and he somewhat curiously accounts for this from "the effect of caustic being to destroy "the life of the part to which it is "applied" forgetting apparently that if the life of the part be destroyed a

certain amount of inflammation will be necessary for the separation of the slough. He mentions a case in which he applied the caustic to a Physician, whom it completely cured in two days, surely such a stricture could not be of a very confirmed organic nature, and in this case he allows that chiefly after the introduction of the caustic. His patient was confined with excessive hæmorrhoids for which however quiet & rest in the horizontal position sufficed.

M. Delpech considers that the effect of the nitrate of silver is only to modify the parts and not to destroy them; and M. Sutton limits its use to taking off the spasm and irritation of the stricture. It is doubtful however if even in such cases it is of any benefit, and in more chronic cases it is wholly inefficacious and at the same time not free from danger. So far back as 1740 Savoyard thoroughly condemned the use of the caustic bougie, mentioning the case of a Priest who died in twenty four hours after

its application. "Rothe" also and "Le Brun" concurred with Lavoy and in this censure the latter declaring that he had learned from experience that instead of destroying the obstruction "they serve only to "cut into the canal" (See Foote Page 297)

W. Guthrie records several cases of Severe rigors and excessive hemorrhages taking place on the separation of the slough; one of his patients declared he had passed several quarts of blood and clotting. W. Guthrie's estimate that half of this was urine, the amount of blood lost must still have been tremendous. although at the same time, when the patient were suffering from the hemorrhagic diathesis, it is not easy to understand where all this blood came from. Upon Wilson although a great advocate of Dr E. Homes method, acknowledges the liability to hemorrhage and moreover (Page 338) records a case in which on the second introduction, the piece of caustic was left in the urethra and subsequently, cut its way

out, a urinary fistula being the consequence
On another occasion Mr J. Home failed
in removing a piece of caustic that had
fallen into the urethra; the caustic des-
troyed half an inch or more of the urethra
caused infiltration of urine, frightful
hoemorrhage and a cicatrix resulted which
stopped the flow of urine
W. Arnott also speaks (Page 132) of several
pints of blood being lost from the caustic
having opened its way into the corpus
spongiosum. He mentions also paragraphs
of a febrile nature, as sickness and complic-
cations; and again he speaks of the
caustic having burnt its way into
the body of the Penis and even into
the Rectum as a frequent occurrence
a fact one would consider sufficient
of itself utterly to condemn the use of
caustic -
One of the best arguments advanced
by the advocates of this mode of treat-
ment, in preference to the use of the
bougie, is the reckless and irritating na-
ture of the latter, to prove the folly

of the supposition that the virtue of wheat is more or less certain, I quote here a case from Sir E Home's own work a case treated by himself, in which the patient in fifteen years had the caustic applied, no less than one thousand two hundred and fifty eight times!! viz

"In 1800 and 1801	—	—	233 times
In 1802 Spring & Autumn	—	—	95 times
In 1803 Spring & Autumn	—	—	107 times
In 1804 Spring & Autumn	—	—	97 times
In 1805 do	do	— —	88 do.
"In 1806 do	do	— —	79 do
"In 1807 do	do	— —	82 do
"In 1808 do	do	— — —	93 do
"In 1809 do	do	— —	68 do
"In 1810 do	do	— —	66 do
"In 1811 do	do		72 do
"In 1812 do	do	— — —	77 do
In 1813 do	do	— — —	70 do
In 1814 do	do		49 do
In 1815 do	— do		12 do

"In all — 1258 times"

The case recorded in Sir E Home's book in immediately following the last seems to have

Mr. Whately (Page 98) records a case in which Sir E Home applied the caustic a number of times without its passing through the stricture at all; and where after living for two years in the greatest misery, the patient died, and on being examined, a false passage was found running down between the bladder and rectum and into which the caustic had been applied instead of to the surface of the stricture.

Such a case plainly demonstrates the absolute folly and wickedness of thus attempting to treat stricture by a chance application of the caustic bougie in the dark, and how little control the surgeon has over its effects; but although Mr. Whately records this case to show the danger of Sir E. Home's treatment by Nitrate of silver; he does not scruple to recommend the still more unmanageable and dangerous escharotic, the Potassa fusa

been quite as tedious & unsatisfactory.
With respect to Mr. Whately's method
of testing by the Potass-a just noticed
received by Mr. Wade, it is astonishing
how much an attempt should ever have
been made with more than it should
have been recorded. If many attend
the use of the nitrate of silver how much
more will it, the employment of the Potass?
Even in applying it externally, from its
great solubility and excessive escharotic
powers, the greatest caution & care are re-
quired to prevent it spreading, and the
effects of its application going too far;
what possibility then can there be of
confounding it in the interior of the sto-
mach, entirely out of our sight? & what
certainty have we that so much and
no more of the constricted portion is des-
troyed? & indeed that it is acting at all
on the part, and not setting up an in-
flammatory and destructive action else-
where, the results of which may be most
disastrous? Mr Whately indeed pre-
tended he could carry the application of

†See page 64

the Potassa fusa to such a nicety, as merely to char the surface without causing any slough or destruction of the tissues. But he must certainly have been unconscious in his own powers, few surgeons I should imagine would profess to such certainty even on the surface of the body. And again what results are we to expect from the burning action of the Potassa fusa; what effects does it in common with all other varieties of Arms. produce elsewhere? why cicatrizing action of the sore, and contraction during cicatrization, plainly tending to reproduce the disease it was employed to cure and reproduce it in an aggravated and still more intractable form*. It is quite unnecessary for me here to say any thing of Mons. Ducamp's outrageous proposal to make caustic nitride of the methea as a means of testing Tincture (see Guthrie Page 46) one of the modern inventions of which Mr Acton speaks so, introducing a catheter having a small cup at its ex-

the cavity, one of the openings of which communicates a portion of spongy platinum; a current of hydrogen is then introduced into the canula, which igniting in the urethra, forms an actual cautery!!

The use of calcined alum, has been much praised by M. Jobert as possessing all the virtues of caustic with none of the inconveniences.

As regards the opinion of Modern surgeons on the subject of cauterization, we have already seen that M. Cruveilhier and M. Amussat ascribe the worst forms of stricture to its employment, and the former although he makes use of it in commencing the treatment of membranous strictures by dilatation, yet considers it true in all cases where there is any induration as tending to increase rather than destroy the indurated portion.

M. Leroy d'Etiolles objects the use of caustic as tending to make the stricture fibrous, tuberculous, callous, incurable.

The late Mr. Liston unhesitatingly condemned its application except in cases

of Stricture complicated with Spasm
a excessive irritability.

Mr Bayliss considers cauterization
not more effectual than the bougie
while it is apt to be attended with
much worse consequences such as Inflam=
mation of the Stricture and of the urethral
mucous membrane.

M. Ricord considers that Potassa fusa when
used in small quantities becomes Saponified
and is consequently useless, while if em=
ployed in larger quantities it is certain
to be attended by most serious consequences
and is not at all calculated to become
a cure of Stricture.

Sir Benjamin Brodie would decline to
limit the practice of cauterization, to
Organic Strictures effected by Spasm "often
"this" he writes "any further benefit to be
"produced by the Caustic must be the re=
"sult of the destruction of the Stricture by
"the formation of repeated Sloughs, a tedious
"and difficult process especially in case
"of old cartilaginous Strictures" * * * "and
"whenever the Caustic is frequently employed

"you are in danger of creating a false pas-
"age in consequence of the dissolved caustic
"flowing to the lowest part of the urethra
"and destroying the parts unequally" (Page 54)
again he allows, that "although the caus-
"tic often relieves pharm, it very often
"increases it" and he also speaks of
ulcers, haemorrhages, and the formation of
abscesses as not unfrequently the result
of cauterization. (Page 55) -
Mons Perrier denounces cauterization as
as vicious in principle, difficult in
practice and ~~declares that it tends to~~
~~produce loss of substance rather than any~~
~~benefit~~; he speaks of having many patients
~~whose cases had been aggravated by the~~
~~previous use of caustic~~, declares that it
tends to reproduce the stricture of ureth-
ra more than before.
Mons. Mercier. objects to it as tending to pro-
duce a loss of substance rather than any
benefit; he speaks of having many patients
whose cases had been aggravated by the
previous use of caustic
Mons. Leroux, although himself an advo-

cate of cauterizing Ulcers, nevertheless acknowledges that he has seen new Strictures form in patients whom he had previously cauterized.

M. Ricord lays down the two following rules for the employment of Caustic 1st. When ever the Stricture allows urine to pass, and yet prevents the entrance of an instrument, however small or well directed

2nd. When dilatation has been employed without success, when but little progress has been made, when inflammatory action has come on, or the case gets worse under our endeavours to augment the dilatation. (Vide Lecture) In the latter case he proposes to apply the caustic to the interior of the Stricture; but the necessity of using Caustic in either of these cases, is, as we shall presently see ✱ now done away.

M. Lenoir while advocating the treatment by the use of the caustic, confesses the danger of its causing retention, admits that we can never be free from a relapse after its use and allows its inefficiency in

old fibrous, fusiform like stricture, and does not commend the practice for its use only considers it an adjustment to incision

The letters published by Dr. Symes in the Monthly Medical Journal for July 1850 from various American surgeons contemporaries of Dr Syme at home, also prove that even then at its first burst of popularity it was by them considered neither so safe nor so effectual as its advocates would lead us to imagine. But enough has been already quoted to prove the unsatisfactory nature of treatment by cauterization, to show, that it is productive of dangerous consequences, and is utterly insufficient for the relief of hymen, I might almost say of any form of stricture. I shall now therefore proceed to the consideration of treatment by incision and endeavour to ascertain how far any of its forms are capable of supplying the deficiencies of dilatation & making up for the inutility of cauterization.

At different periods in the history of Stricture we find at considerable intervals of time, proposals made for its relief by means of incision, either by cutting from within, or what has been called Lacerification or cutting by cutting from without down upon the Stricture first -

Alfonso Ferri so early as 1550 passed a sharp-pointed stilette, through a hollow bougie and endeavoured to push it through the Stricture; and in more modern days instruments of the same principle have been invented & applied although as might have been expected, they were found quite unavailing.

John Hunter records (Page 40) a case in the year 1765, in which, suspecting that the bougie, which had previously been employed for its relief, had been directed first & not through the Stricture, he performed a modification, of what is now termed the old operation, by passing a staff down to the seat of the obstruction and cutting upon its point in search of the Stricture, but Hunter

also passed a canula through the wound from the posterior part of the structure and out between the points of the instruments; and this case seems to have been quite successful. But both Hunter and Desault seem to have confined the operation to cases complicated by false passages, and those in which much infiltration had taken place behind the stricture. This method of treatment has been practised pretty extensively as a Hernia resort when all other attempts have failed, and even at the present day it is occasionally performed; but the great uncertainty as to whether we reach the urethra or not, which attends it, coupled with the certainty that if we do not, the operation is not only fruitless but will also in all probability be productive of most alarming constitutional symptoms terminating it may be in death, have caused it, with reason, to fall into disrepute. In later times instruments have been invented by different Surgeons

more particularly by M. Ammussat and M. Stafford by which the sides of the stricture might be scarified or incised completely division from within, by means of a sanctified catheter, or other instrument passed down to the spot.

M. Stafford describes two such instruments he had contrived; one for those cases in which the stricture can be passed, the other for those that are impermeable and he recommends that the operation a catheter should be introduced so that the urine be prevented passing along the urethra for three or four days. It is obvious however that the objection of uncertainty as to the extent of the division, formerly made to the use of caustic, applies although in a less degree to this operation; either the amount of cutting will be insufficient to relieve the stricture, or as Sir B. Brodie observes "there must always "be the danger of the cutting instrument "penetrating into the surrounding cellular "tissue" and so exposing to the danger of

extravasation. The tendency to which would be increased from the nature of the wound having no external opening to allow free escape of urine. Mr. Mayo however was tolerably successful in this practice by this method, but he would seem to limit its use to stricture posterior to the suspensory ligament, to cases of rupture of the urethra, and those attended by urinary fistulæ and sinuses, with general thickening of the perineum—

Mr. Arnott proposed to treat strictures by cutting out a portion of the stricture part. He compares the operation to that of "cutting out a portion of the cranium "by the trephine, the whole substance "forming the stricture is instantly removed "by one push and turn of the circular "knife carried against it" (Arnott Page 156) On the folly of such a proposal it is needless to dwell. This proposal I find in another work ascribed to Mr. Benjamin Phillips. In the year 1829 Mr. Civiale proposed by means of an instrument, which he calls an Urethrotome, consisting of a blade

enclosed in a straight sheath, to remedy Stricture by dividing them from within, he has recorded several successful cases, but to this as to all operations from within the objection of uncertainty applies it might perhaps however be found of use, in cases of Stricture anterior to the bulbus where we could direct its application with more certitude and would also avoid the risk of causing Hypospadias, an affection which is well known to be apt to result from any complete external incision in this part of the urethra. In fact from the instrument's being straight, it would be difficult to apply it more posteriorly -

Again it has been proposed to treat Stricture from within by subcutaneous division of the indurated portion, this was first suggested by Mr. Syme and although not found to answer in practice, it led I believe to, Mr Symes proposal of the method next to be described

In the year 1840 Mr. Syme published an account of a new method of treating

stricture by incision by of cutting down upon the stricture from without, cutting upon a grooved instrument previously passed through the stricture, completed by dividing the latter, and then withdrawing a full sized catheter into the bladder and retaining it there for forty eight hours. The minute details of the operation it is unnecessary for me to go over here, they are thoroughly and carefully recorded in Mr. Syme's works; but although so clearly laid down, the generality of English Medical Men, who at first rejected the proposal with contempt and afterwards assailed it with abuse, seem either unable or what is more probable unwilling to understand them; thus we continually see cases recorded as Mr. Syme's operation, in which the most essential of the operations namely the previous passing of a director through the stricture and cutting upon it, had been entirely omitted; such was found to be the case with regard to eleven out of the fifteen cases rejected by Ricord

Ferguson, Bowman, Partridge, Simm and another person whose name was not known, and upon the general results of which cases Mr. Acton in some way or another discovered grounds, to found his statement, that all the cases in which the Operation performed, died (see Monthly Medical Journal Sept. 1851) and I remember last summer while visiting the Hospital of one of the most considerable Manufacturing towns in England being quite surprised, at the utter ignorance that prevailed regarding this old important part of the operation. That part, in fact, which alone distinguishes it from the old and highly dangerous method of cutting down on the stricture, with ~~a bistoury~~ a bistoury to guide the knife with the canal of the urethra and again in the Lancet in the month of July 1851, there was published a case purporting to be an example of Mr. Syme's Operation, in which the operator first cut into the urethra in front of the constriction without any director. Then passed

a direction thro' the Urethra and finally ~~[illegible]~~ divided. the Urethra itself, and this simply attempt he designates as an example of Mr. Symes's operation;

But even by those who have maintained the operation, various objections have been started to it such as denying the axiom laid down by Mr. Syme that all Urethras are permeable, secondly the dangers which are said to attend its performance and thirdly doubts as to its efficacy in curing the complaint.

First then as regards the permeability of all Urethras, Mr. Symes own practice has of itself gone far to prove the justice of his statement, having never failed in passing the catheter, though any Urethra however tight, since the announcement of his proposition. But besides, there does not seem to be any reason why a Urethra should be impermeable, complete permanent obstruction of the canal could only be caused by adhesive inflammation, which very rarely occurs in mucous passages, never in the urethra, at least

no case of it has ever been recorded. and the other form of obstruction could certainly block up the canal, so as to prevent the passage of urine. but surely where urine has room to pass out there must be room for an instrument if carefully & perseveringly employed to pass in. of course in so shocking cases of retention are not included, such cases may & do occur in which it is for the time absolutely impossible to pass an instrument, but these are not cases of permanent obstruction, it is not the stricture alone that causes the retention but the superaddition of a spasmodic attack upon the stricture, & it may be in a previously healthy canal, causing complete opposition of the walls of the canal, and consequently entire stoppage to the flow of urine. such cases do not it is evident come under Mr. Syme's statement. that gentleman plainly declares that the case of the strictures which he maintains to be always permeable "is quite different from that of a distended

M. Delpech although not denying their existence, considers impermeable strictures extremely rare and in this point he is supported by M. Ramsden & M. Civiale

In the Lancet for December 7th 1850 two gentlemen of the name of Chippendale and Hicks have written to the accuracy of M. Lynn's statement as to the permeability of all strictures, although they do not coincide with his views respecting the treatment, because they consider the Bougie insufficient for all cases

"Obstacles requiring immediate relief. I have
"never maintained that in such circumstances the
"introduction of a catheter was always
"practicable". Some persons have de-
clared that in very tight strictures Mr
Syme does not always pass the instru-
ment down the urethra, but that he
forces it through the indurated surrou-
ding parts. But the results of the treat-
ment show the falsity of such insin-
uations, had not the instrument
been really in the urethra, we should
not have the speedy recovery, the absence
of bad symptoms, and the permanence
of the relief which attend these cases in
Mr. Syme's hands. And moreover I should
think no one would be likely to re-
ject the accusation, who had witnessed
Mr. Syme's cautious, patient and gentleman-
like way of using the sound. Never do, in-
deed, states, shunning one drop of blood.

Secondly as regards the dangers attending
the operation, there have been repre-
sented as of the most frightful descrip-
tion; exhaustion or suppression of urine

delirium, fright fat haemorrhage and the occurrence of suppurative deposits in internal organs are a part of the category of horrors, mentioned by the opponents of the operation, as attending it. But when we come finally to consider these, we find them to be absolutely without foundation at least as regards the operation as performed in this city, the only case which did not succeed was that published by Dr. Ashburst in which certainly symptoms of a most inaccountable nature presented themselves, unless we refer them to some old standing complaint in this chest, in which a great "of purulent fluid was found in the cavity of the right Pleura, both surfaces of "which were coated, to the thickness of about "a quarter of an inch with soft yellow lymph" which could hardly one would imagine have been formed during the eight days that elapsed between the operation and his death. During the short time I acted as Clinical Clerk with W. Byrne there were eleven cases treated in this manner, all of whom I saw, constantly night and day from the

time they were operated on, until they left the hospital and I can safely say that in not one of these did a single bad symptom show itself. It is not uncommon a few hours after the operation for the patient to have slight shiverings, sometimes attended by a little vomiting, but without any acceleration of the pulse, a flushed expression of countenance which characterise the rigors attendant on a laceration of urine, the patient in fact although he cannot help shivering, is usually free from feeling any discomfort, and it is probably analogous to those shiverings, fits, also attended in some cases by vomiting, which are recorded by Rigby & Burns as invariably occurring in parturient females, just when the head of the child is about to leave the uterus and enter the vagina. In fact both of these would seem to be instances, of a curious sympathy that exists, between the system in general and the mucous membrane of the what continental writers call the vo= genitative (in contradistinction to the for=

matine) organs of generation, and to this also probably may be attributed many of those slight attacks of injury which follow the use of a metallic bougie. W. Lyme I think attributes these showerings to the urine resuming its natural passage, whatever be their origin they are of no importance and may in general be easily relieved by a few drops of Ol. volatile although even this is seldom required. The smallness of the exposed surfaces, the presence of the catheter in the bladder & the free exit to any urine that may reach the wound, from its known external opening and the uninjured condition of the deep seated parts remove all risk of extravasation of urine while as regards haemorrhage I can only say I never saw any exceeding a couple of tablespoonfuls, and where the extensive haemorrhage that has been spoken of could come from is a mystery No vessel can be cut in the operation that could give rise to it, so much on extent, and even if the bulb be divided

as the section takes place in the centre, there is no vessel of any size even there to cause dangerous bleeding, and Guthrie declares (Page 172) that division of the bulb in such cases is of no importance.

The extent of the wound also has been described by some writers as something fearful, as an incision several inches in length &c. I have never seen it in any of the Cyprus cases exceed one inch and a half, nor does it seem probable that any practitioner could require a wound of larger dimensions. Mr Syme has mentioned in his work that one of his earlier cases was attacked by erysipelas, this of course has been pounced upon by his opponents, but it is a well known fact, that in some persons erysipelas will follow any injury however slight, and Guthrie states that it is peculiarly apt to attack the scrotum. I recollect seeing a case in which erysipelas followed an attempt to introduce a bougie.

Lastly as to the efficiency of the operation and its power of re-

having the complaint. As regards the principle of its action, it seems in the first place to act as a stimulus of a minor kind, exciting absorption of the surrounding inflammation and in the second place by removing the obstruction it allows the altered mucous membrane behind to recover itself from the irritable condition into which it had been thrown, which irritable condition although the result of the stricture in the first instance had incontestably a great deal to do with its maintenance W. Guthrie in speaking of the old operation, considers that the large catheter which is introduced & retained, has a great effect on the surrounding inflammation (Guthrie Pg 178) and W. Thompson declares that the inflammation usually disappears in forty eight hours.

The objection has been started that after division, supposing the inflammated deposit absorbed there would be a deficiency of mucous membrane too great to allow the canal to regain its normal size, but

Of course after the operation is performed and the cure completed, the occasional introduction of a bougie, should not be omitted the guard against reconstruction in the future.

I have sometimes imagined that a Catheter of an S shape would be more convenient than the ordinary catheter, as the patients often complain of the state of tension in which the penis is kept by the retained catheter.

they forget that it is a submucous deposit not a thickening of the mucous coat and that the latter may be considered only folded or puckered upon itself ready to expand when the detaining morbid deposit shall be removed; from the opinions given at page fourteen of this thesis it will be seen that the mucous membrane ~~xx~~ is generally considered to retain its normal character.

The results of the practical trial of this operation have borne out triumphantly the favourable anticipations of its proposer. In Mr. Symes own practice he can now I believe enumerate upwards of fifty cases, without a single failure or unpleasant occurrence. While as some years have now elapsed since he first performed the operation he has been thus enabled to prove its power of giving permanent as well as immediate relief. And that too in those cases in which we have already seen the bougie and caustic to be ineffectual. Whilst it is free from the

tediousness of the former and the dangers of the latter. And so simple is the operation, so little inconvenience does it give the patient in comparison to the almost incalculable relief & it affords from all his previous miseries, that I have more than once been told by patients in the hospital that they would willingly submit to the operation every month, so great was the comfort & benefit they derived from it.

Besides the cases published by Mr Syme in his work on Stricture and also from time to time in the Monthly Journal, cases have also been recorded by D. Brinsmead and D. Buchanan, of Dalmellington (Monthly Medical Journal June 1851) in which they have met with complete success. In England the profession seems slow to avail themselves of it. W. Coulson has lately published two successful cases, and some time ago as already stated there were two published in the Lancet as cases of Mr. Syme's operation, which however

were modifications of it only and by no means improvements.

But enough has now been said I think to show that Dr Byrne's operation as regards safety, efficiency and economy, excels in difficult cases any form of treatment that had previously existed, and it is founded on sound principles & borne out by the results of practical experience. Not that it is to be considered as doing away with the treatment by Dilatation, the latter ought still to be employed in all simple cases but as we have already seen in cases of old Stricture, or past operation it is little more than a means of temporary alleviation, whilst the treatment by Caustic of whatever kind is both dangerous, inefficient and mischievous, dangerous at the time of application, ineffectual for the relief of old Strictures, and mischievous in so much as it tends to produce of itself a worse Stricture than the original (those Strictures caused by ulcera-

tion being the most intractable of all)
it is to supply this desideratum that
Mr. Syme's operation is so well calcu=
lated, to relieve those persons, who
formerly were considered beyond the
aid of surgery or who passed a miser-
able existence under the vain attempts
made for their cure.

These terminate the imperfect and
I fear unconnected remarks I have made
upon Organic Stricture of the Urethra
the treatment of which has long been
of a doubtful and unsatisfactory nature
but upon which a new and better
light is now beginning to break.

G. Hoyt [illegible] P. Myle