strokes;" subsequently "112, not so strong;" and towards the termination of the disease, "86, slightly jerking;" (14), 120—128, tremulous, and very variable; (15), soft, slow, and irregular; (16), when first seen, 54—60, irregular and intermittent; during the paroxysms it varied from 64 to 86, and was occasionally "sharp;" after the paroxysms it varied from 140 to 180, and was "small;" (17), at three several times of observation it was, (a), 85 "hurried;" (b), 128, visible pulsation of the carotids; (c), smaller and quicker; (18), fluttering; (19), varied from 120 to 138; (20), 72—90, weak and irregular; (21), 160—120, small, unequal, almost imperceptible from muscular tremors; (22), during the progress of the disease the pulse underwent the following variations:—(a), 76, feeble, when composed; (b), 84, feeble, very excitable; (c), fluctuating from 100—116; during a period of slumber, 100; (d), 136, tolerably strong and regular; (23), feeble, very frequent; (24), large, soft; beating of the heart, hasty and sonorous; (25), small, very frequent; (26), strong and frequent; three hours after, frequent, very strong and unequal; subsequently strong; (27), 130; (28), 70—80, full; (29), regular, then accelerated; (30), frequent; (31), 80; (32), 90; (33), 120 and full; and (34), 120—130, full.

The state of the *tongue* is described in 13 cases. Thus (1), it was covered with a moist, thick, tenacious, white coating; (2), moist and clean; (3), moist, protruded and retracted rapidly; (4), furred, brownish, rather dry, edges purple-red and moist; (5), white and dry; (6 and 7), white; (8), furred, dry, and parched; (9), dry, mouth parched and hot; (10), tongue milky-white, not furred; mouth dry; (11), covered with a brownish fur, subsequently white; (12), morbid red and dry; and (13), clean, fauces redder than natural.

The state of the *secretions of the mouth, nostrils, and air-passages* is described or indicated in 38 cases, as follows:—

(1), Copious flow of saliva; (2), copious flow of saliva; the patient spat it about in all directions; (3), spit much; visage covered with foam; (4), spit often; efforts to vomit; (5), hawking up a frothy, irritative secretion; (6), spits much, and constantly vomits; (7), continually spitting a white, frothy phlegm; (8), continually spitting about; (9), after each spasm, the mouth was filled with a frothy saliva, which the patient spat freely about; (10), great quantity of saliva, apparently bloody; (11), frothy saliva, viscid, of a brick-dust colour; (12), copious flow of glutinous, frothy saliva, mixed with dark patches of blood; (13—16), spit continually a foamy, viscid matter; (17—19), a thick, viscid, troublesome saliva; in one of these cases, it is stated that this secretion came on twenty-four hours after marked symptoms of the disease; (20), a yellow and tenacious saliva, separable with difficulty; (21), a yellow and tenacious saliva; "hence, when the patient opened his mouth, it could be seen adhering to the roof, but no foam;" (22), great discharge of viscid saliva, and mucous discharge from the nostrils; the patient spat so much that the bed was wetted; (23), a large quantity of saliva; bed-linen wetted with it; (24), expectoration of a viscid mucus; (25), excessive secretion of tenacious mucus; (26 and 27), a viscid, frothy mucus flowed from the mouth in profusion; (28), a large quantity of ropy saliva; (29), saliva viscid and annoying; the patient exclaimed, "Oh, do something for me; I would suffer myself to be cut in pieces; I cannot raise the phlegm, it sticks to me like bird-lime;" (30), constantly spitting a frothy matter; (31), a small quantity of spumy matter detached with difficulty; the mouth dry; (32), often spitting up some mucus, which, when detached, seemed to relieve him; (33), abundant secretion of saliva; (34), saliva viscous, remained adherent to the lips; (35—36), abundant secretion of saliva; (37), saliva abundant, but the patient expectorated with difficulty; (38), spits rarely; and (39), excessive discharge of mucus from the nostrils.

(To be continued.)

THE HISTORY AND PRACTICE OF URETHRO- PLASTY.

By HENRY THOMPSON, M.B., F.R.C.S.,
HONORARY SURGEON TO THE MARYLEBONE INFIRMARY, ASSISTANT-
SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

No. I.

IN endeavouring to develop some rules adapted to guide our practice in the treatment of the more formidable examples of urethral fistula, I shall present a brief history of the steps by which modern surgeons have advanced the practice of urethro-

plasty; and for this purpose shall refer to their own histories of certain typical examples, with such records of the operative procedures which have been actually performed, of the difficulties which have arisen, and of the means by which they have been surmounted, as shall furnish valuable suggestions to those who may hereafter be called upon to deal with similar cases. It may be observed, that each operator who has had much experience has hitherto purchased the success which has ultimately crowned his efforts by some positive failures at the outset; but they have been of such a nature that a careful study of these unsuccessful efforts will do much to secure us against a repetition of them. And as no two cases of this kind are quite parallel, each presenting some character which tends to individualize it, a special and independent mode of action must be often necessary. Still it will be generally most desirable to regulate it by certain principles, educed from the experience of others. Hence the value of these records to the practical surgeon.

In entering upon the subject, it is incumbent to advert to the fact—now, apparently, somewhat overlooked—that to English surgery must be awarded the honour of originating plastic operations for the reparation of loss of substance in the male urethra. So closely associated with the progress of reparative surgery at the present day have become, and most justly so, the names of Dieffenbach, Roux, Jobert, and others less familiar to the ear, that the first referred to seems almost to have been forgotten even here, and the art itself in a fair way for being popularly regarded as exotic to our soil. It is also a fact, that while the exercise of surgical skill in the repair of certain lost or mutilated parts is of most ancient and venerable origin, its application in the manner denoted dates from the present century.

The earliest traces of the practice of plastic surgery must be sought amidst the dim traditions of Egyptian history, and subsequently amongst those of other oriental nations. Certain orders of the priesthood in India appear to have undertaken with considerable success the restoration of lost noses, lips, and ears; but we do not hear of any proceedings relating to the reparation of other parts of the body. In Europe, about the middle of the fifteenth century, the first records of the art commence; but these are almost lost sight of in the fame of Taliacotius, professor of medicine in the following century at Bologna, who became celebrated for restoring noses by what has since been termed the Italian method, and his great and learned work on this subject, published in 1597, remains a monument of the erudition, no less than of the surgical prowess, of its author. With the death of Taliacotius and his immediate pupils, rhinoplasty remained for a long period in abeyance. It was then revived in Europe from observation of the Indian practice, which became known soon after the year 1790; and its first reappearance in this quarter of the globe took place in England in 1803, in the hands of Mr. Lucas, while it was first successfully practised by Mr. Carpué, in 1814. Since that time, plastic surgery has received a new impulse, commencing in Germany with the labours of Gräfe, and in France, not until some years afterwards, in the practice of the leading surgeons of that time—Delpech, Larrey, Dupuytren, Roux, Velpeau, and others. Up to this time, however, the mutilated urethra had not been restored by the exercise of surgical skill.

These and the subsequent remarks are elicited by certain observations made by the modern exponent of plastic surgery in France, M. Jobert (de Lamballe), in which he formally claims for his country the honour of giving rise to urethroplastic surgery.* Such a pretence is wholly at variance with facts, neither are any adduced in support of it. In narrating the history of reparative surgery, the illustrious Roux equally overlooks the facts to which I am about to call attention, claiming *all* the novel and original enterprises in the department of our art as the offspring of the genius of French surgery—"elles appartiennent toutes à la chirurgie Française."[†]

After a careful investigation of the English, French, and German literature which relates to the subject, I proceed to

* *Traité de Chirurgie Plastique*. Par A. J. Jobert (de Lamballe). Paris, 1849. Tome ii., p. 136, *et seq.*

† *Quarante Années de Pratique Chirurgicale*. Par Ph. J. Roux. Tome i., p. 56.

affirm that the first case on record, or of which any tradition exists, of an autoplasmic operation having been performed for a fistulous opening of the urethra, is one that occurred in the practice of Sir Astley Cooper, by whom the proceeding was designed and executed with the most successful issue. The history is given at length in his "Surgical Essays."* The following is a brief outline of it:—

Mr. H—, aged fifty-six, had long been the subject of stricture. In July, 1818, he had inflammation and abscess in the perinæum, and also anterior to the scrotum. After discharging their contents, the former healed, but the latter remained fistulous, and resulted in an opening, "half an inch in length, and of sufficient width to admit with ease the largest catheter." In November, most of the urine passed through the opening; its edges were callous, notwithstanding the frequent application of nitrate of silver, and showed no disposition to heal.

Dec. 9th.—An elastic catheter being passed into the bladder, Mr. Cooper pared the edges of the opening, and then from the skin of the scrotum he dissected a flap attached by its upper part, and turned it over upon the wound, to which it was exactly fitted, and placed in good apposition by four points of interrupted suture, assisted by adhesive plaster. A bandage was applied to support the scrotum, and the catheter was left in the bladder.

10th.—A little urine passed through the wound.

13th.—Urine has again appeared by the wound; scrotum swollen.

15th.—Dressings removed; parts in good apposition, but œdematous; sutures retained their hold; fresh adhesive plaster applied. To be dressed daily in a similar manner.

21st.—Catheter was changed for the first time the day before yesterday; upper and left side of flap united; discharge from the right side.

22nd and 23rd.—Sutures removed, as they were keeping up irritation.

27th.—Catheter again changed; the ununited corner of the flap is maintained in apposition with the subjacent surface by a compress of lint and adhesive plaster.

31st.—Compresses have been applied daily, and have greatly diminished the discharge.

Jan. 10th, 1819.—Adhesion advanced by the use of pressure, but not complete; catheter to be withdrawn every day for a few hours, but no urine to be passed without it.

Feb. 1st.—Passed urine for the first time by the natural passage; none by the wound. To use the catheter in future.

March 3rd.—Has emptied his bladder by catheter up to this time; a very slight oozing occasionally at the right side. To pass urine in the natural manner.

Oct. 14th.—Dilatation has been kept up. The opening has been soundly healed for seven months.

Exactly thirty years after the publication of this case, M. Jobert writes: "All the autoplasmic proceedings which have been employed to cure ante-scrotal fistulæ are derived from the French method, and constitute but varieties of it." (*Op. cit.*, p. 149.) After describing some of the plans followed by Dieffenbach, Alliot, Ségalas, and Ricord, he describes "his own method as follows:—

"My proceeding depends chiefly on the necessity of borrowing a flap at the expense of the scrotum, of reviving largely the external and internal circumference of the fistulæ, of maintaining the raw surfaces in contact by the interrupted suture, and finally of exercising a gentle compression upon the parts by the aid of agarie and adhesive bandages, and of a gum-elastic catheter introduced into the bladder, which at all times serves as a point of support, and as a conductor for the urine."—p. 162.

It may be left to my reader to determine whether the proceeding of M. Jobert differs in the smallest particular from that adopted by our illustrious countryman so many years before.

Without pursuing this subject further, it may be stated that M. Blandin had admitted the prior claim of the English surgeons in the following language:—"This operation (urethroplasty) was at first practised in England by Earle and Sir A. Cooper, since which it has been done by many surgeons of all countries."† It must be admitted that M. Jobert adverts,

although in the slightest manner, to the fact implied in Cooper's case, but he wholly ignores it in the tenour and spirit of his writings, not only in the passage referred to, but in several others of a similar character.

Sir A. Cooper's case was soon followed by another in the practice of Mr. Earle, of Bartholomew's Hospital, in the year 1819.

The patient had lost a large part of the integument of the perinæum by extravasation of urine, and "a large, smooth cicatrix occupied the place of the urethra, no vestige of which remained at that part." Having dilated the anterior part of the canal, Mr. Earle determined to employ the "smooth cicatrized surface, as it had become insensible to the irritation of the urine, in the formation of a canal, and to endeavour to connect by it the two portions of the urethra." Accordingly, "a portion of integument was removed, about an inch and a half long, and one-third of an inch in width, on the left side of the cicatrix, the groove thus formed being intended to receive the edge of skin to be detached from the opposite side. An incision was then made across the perinæum, above and below, so as to pare away the callous edges of the urethra. The cutis was next dissected off from a portion of integument on the right side of the perinæum, about an inch and a half in length, and half an inch broad, leaving a smooth space of rather more than an inch between the cut surfaces, which was intended to form the lining of the new canal. The integuments on the right side were now dissected up, turned over a catheter, and brought in contact with the opposite groove." The flap was retained in its new position by two sutures, some adhesive plaster, and a bandage. Next day, some urine escaped by the side of the catheter; and on the third, although some sloughing had occurred, a sufficient amount of adhesion had taken place to "form a canal open at one side, and large enough to include the whole catheter." Subsequently, this was somewhat impaired by the contraction of the cicatrix newly formed in the place from which the flap had been dissected. After this had ceased, several attempts were made to unite the edges by reviving them, and placing them in contact, but all failed.

In 1820, a second operation was performed.

"In this attempt," says Mr. Earle, "I borrowed integuments from the opposite side to that I had taken them from in my first. A deep groove was made on the right side, the surface was denuded of its cutis to some extent, a considerable portion of integument was then detached from the left side, and in order to obtain healthy skin, I encroached a little on the thigh, and laid bare the edge of the fascia lata. Instead of passing any ligature through the detached portion, the old quill suture was employed, which was passed from the two outer cut surfaces. A pad of adhesive plaster was interposed between the ligatures and the flap of skin, to diffuse the pressure more generally, and my patient, being now quite an adept in passing the catheter, was directed to introduce it about three times in the twenty-four hours, instead of retaining it in the bladder, which had permitted some of the urine to pass insensibly away, and had acted prejudicially in the former operation. By this attempt much more was gained, and about two-thirds of the canal were completed; still, however, there remained a small aperture at the upper part. We again attempted to close this by denuding the edges with escharotics and the lancet, but it skinned over too rapidly to allow of any union between the opposite surfaces. A third operation, on a smaller scale, was therefore necessary, which so nearly completed the cure as to leave only an orifice large enough to admit a bristle, which has subsequently closed, and at the present time (March, 1821) he remains perfectly well, and is able to expel the contents of his bladder *pleno rivo*."

The following foot-note is appended:—"Since the above was written, he has continued perfectly well; he is now married, and a father."*

The plans of proceeding in these two cases were totally different. In the second, the impossibility of preventing contact between the urine and the newly-united surfaces was recognised, and Mr. Earle provided for it by employing the catheter three times a day, rather than permit it to remain in the bladder, a plan which has recently been revived in France. In these cases, we have not only the germs, but also to a great extent the development, of those modes of operation which have since been largely adopted in other countries. It is on this account that they have been given with some detail, and it is necessary now only very briefly to sketch the progress of the art down to the present time.

(To be continued.)

* Surgical Essays. By A. Cooper, F.R.S. London, 1819. Part ii., p. 207.

† Autoplasmic, par Ph. Fréd. Blandin. Paris, 1836. Page 75.

In reference to the history of rhinoplasty, M. Blandin is equally candid, saying, "A Carpaue qu'appartient la gloire d'avoir donné l'impulse, en 1814..... cet exemple eut le plus grand retentissement en Europe; il suffit pour veiller l'attention, &c."—Idem, p. 33.

* Practical Observations on Surgery. By H. Earle, F.R.S. London, 1823.