either side and dragging all the lateral aspect of the parts toward the mesial line by means of adhesive strips.

Fig. 475.

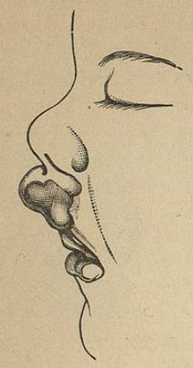
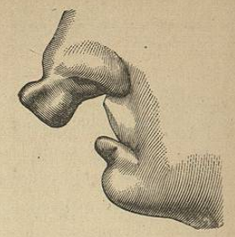
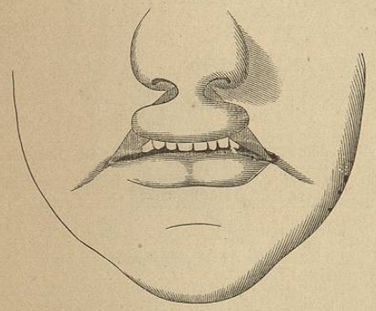


Fig. 476.



In this case traction on the pins necessitated their removal earlier than was desirable; but moderate union was found to have been secured at the free border of the lip,—that is, with the parings. Taking advantage of this, support was kept up by means of an extemporized Hainsby's compress, and after two weeks the cleft was found obliterated, having been filled up by granulation.

Fig. 477.



This case is selected as an example, because it is an instance where nothing better might have been done than the operation practised, the child not having force to endure a more complicated means of treatment. It was not desirable to have a cure by granulation; but it was better than taking risks overbalancing the good to be secured.

Fig. 3, Plate VI., exhibits the manner of placing a pin.

Fig. 5 exhibits three pins in place, the points being cut off, and the parts retained in apposition by means of the figure-of-8.

Fig. 6 exhibits the dressing of a simple, uncomplicated double hare-lip.

Pins.—Until very familiar with the operation, it is advised that in approximating flaps the ordinary steel or gold pin be used. Such means, while having the objections noticed, will yet be found of ready, easy, and convenient application.

In passing a pin, it is to be carried forward until within about three lines of the head.

In casting the figure-of-8, no more strain is to be employed than suffices to hold the denuded surfaces in contact; more than this is almost sure to result in strangulation of the compressed parts, a consequent ulceration marking the line of the pins. Cotton twine is to be used.

Pins are always to be removed as quickly as parts are found sufficiently self-supporting, their presence interfering necessarily with the process of union.

In withdrawing a pin, support is demanded by the lip. A rude removal is apt to tear asunder the delicate granulations.

Fig. 478.

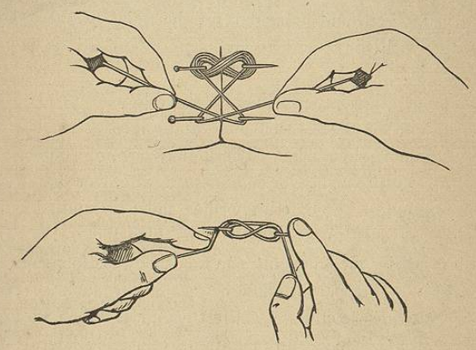


Fig. 478 exhibits the twisted or hare-lip suture, together with the manner of making it.

CHAPTER XLVII.

OPERATIONS UPON THE LIPS AND CHEEK.

As the result of disease or of accident, persons occasionally suffer from contraction of the orifice of the mouth,—a most unhappy condition, both as regards appearance and comfort. Such contractions are represented in Plate VI., Figs. 7, 8, and 9.

Dieffenbach, of Berlin, who interested himself very much in the surgery of the mouth, suggested and practised for the relief of these deformities an operation, which, with slight and unimportant modifications, is the one still generally employed.

Dieffenbach's operation is performed on the following principles: Map out with pen and ink on the tissues such lines and angles as meet approbation of what the proper mouth should be. These lines are, of course, to be in conjunction with the existing orifice, or commissure, wherever or however situated, —that is, the relation of the existing orifice must be studied as it is to have association with the cuts to be made. Thus, glancing at Fig. 7, we at once appreciate the necessity for enlarging the mouth by sections equilateral to the centre, as certainly it is apparent enough that only by such a form of incision —represented by a line—could we secure the end at which we aim. Fig. 8, on the contrary, would demand an operation exclusively lateral; for here the mouth at its right side is as perfect as one would hope to make it. Fig. 9 presents a complication on these simple conditions. This complication might be multiplied almost indefinitely; for who may say in what condition a wound or other injury shall leave a part? At any rate, the surgeon is to be prepared to meet all kinds of modifications. The three figures give, however, as just an idea of the mechanico-surgical indications of such cases as any others that might be drawn. Figs. 7 and 8 are from life; 9 is one made up to represent a not unlikely aspect.* It exhibits, as is seen, a combination of a cicatrix and hare-lip. In this last case is suggested of itself the necessity for a double operation. The mouth is to be made smaller before it would be at all proper to attempt making it larger. We must first perform a hare-lip operation. Imagine this done, and then, further, the condition in which such operation would leave the orifice. If we refer to the drawing, we see that the opening is now at what is fairly the right angle of the mouth; and an operation for the making of a proper commissure, if there were no hare- or cleft-lip, would be precisely the same lateral incision as that

* Fig. 9 is not correct to the text: add to it the defect in Fig. 1, and it will be right.

indicated in Case 8. But then it is to be remarked that, after the first operation was performed, the orifice would not be, as now, at the proper right angle. The bringing of the cleft together would pull it naturally toward the mesial line. Thus, then, it is made a cross between 7 and 8; it is not like 7, because it is not exactly in the mesial line, and it would not be like 8, because it has been drawn from the proper right angle toward the mesial line. Here, then, the complication has materially changed the indications of the principal operation. The incisions are to be bilateral, yet not equally so as reference is had to the false commissural centre, but only as reference would be made, say to the septum narium or to any other fixed mesial line proper. The space between the central incisor teeth would be a good mesial centre to adopt.

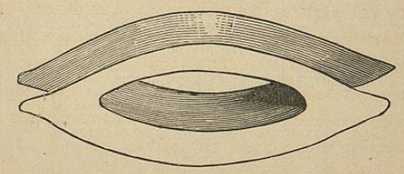
These features well considered, the surgeon takes up a pair of sharp-pointed scissors, and, passing a finger of the left hand into the mouth, enters one blade down through the tissues toward the finger, sparing alone in the puncture the mucous membrane; the blade is now pushed forward toward the mesial line, and the tissues incised, as indicated by the superior right lateral half of the ellipse represented by the line in Fig. 7. The blade is now reintroduced at the previous point of entrance, and the cut made on the inferior lip precisely as was done above. Next is dissected out the triangular piece. These incisions are repeated on the opposite side. A succeeding step considers the cutting of the mucous membrane. This is done simply by dividing it down the centre to within two or three lines of the angle of the wound; it is then to be brought over the raw surfaces and attached by means of the interrupted suture to the skin.

This mode of re-establishing the oral orifice is deemed to be the best that can be employed.

A modification on the manner of Dieffenbach, which the author would suggest, and which he is confident will be found to add to the good results, is an association with the surgical means of a mechanical appliance.

After the operation, as described, has been performed, and time has been given for union of the reflected mucous membrane, let such an appliance as

Fig. 479.



is here figured (mouth-stretcher, it might be called, Fig. 479) be prepared, and slip it between the lips. This stretcher represents a properly-shaped mouth; the lips in the whole of their circumferences are caught and held by the gutter

of the apparatus, and thus not only is the healing influenced to a desired shape, but undue cicatricial contraction is prevented.

If it be objected that such an instrument looks ungainly in the mouth, it is to reply that after the first week or two there would exist no occasion for its constant wearing; it might be entirely dispensed with during the day and be worn alone at night. Use of it is to be continued, however, for at least six months, if cure is to be perfected. An advantage yielded by such an appliance to a bungling operator lies in the fact that it naturally corrects any imperfection in his manipulations; the character of the apparatus compelling the regular healing of the wound. Indeed, the writer is not sure but that in this way a proper mouth might be made if the strictly surgical part consisted only in a simple incision to enlarge the parts to a proper capacity; for in the operation it cannot be said that the reflection of the mucous membrane is an absolute necessity; whether that membrane should be carried over the cut surface or not, we would very soon have it clothed with such tissue, or at least with that found sufficiently analogous to fairly represent it. The great difficulty, as has been remarked by Dr. Mütter, in all these cases arises from the constant tendency to contraction manifested by the cicatrix, which occasionally goes on to such an extent that the orifice of the mouth is almost closed. At the first examination of such a deformity, the remedy which seems to promise most success, says Dr. M., is mechanical dilatation. Unfortunately, this is productive of but temporary relief, and has never, I believe, effected a permanent cure. Next to this method comes incision of the commissures. We might naturally expect such a course to be sufficient to effect the ends desired; and in all probability this would be the case, could we by any means prevent reunion of the edges of our incisions. But this, it would appear from statements of the best authorities, has hitherto been impossible: for, notwithstanding introduction of tents, leaves of sheet-lead, cerate cloth, etc., between the lips of the wounds, adhesions, more or less complete, are sure to take place.

The instrument here suggested will master indications which the appliances heretofore used have not been able to meet. A tent, or cerate cloth, or strip of easily yielding sheet-lead cannot resist the great contractile force existing in these conditions; something fixed and immovable is required. One would not be willing to trust to a less resisting body than the catheter, after urethral section. It might be asked, "What need of such appliances, if Dieffenbach's operation will effect a cure?" Unfortunately, Dieffenbach's manipulations cannot in all cases be carried out. If the mucous membrane, for example, participate in the lesion, the operation cannot be successfully performed. Or who can say that flaps of mucous membrane, however nicely approximated with the skin, will unite? There are several things which are apt to come between the surgeon and success. There are, at least, cases which Dieffenbach's nice operation will not cure.

A preliminary performance, having the object of obviating the tendency to closure of the mouth, consists in first passing through the tissues, at the proposed sites of the angles of the lips, setons of delicate india-rubber tubing. These are to remain in place until the orifices are cicatrized, precisely as in the case of the pinged ear. No trouble after this is experienced in preserving the mouth as formed.

Studies.—Plastic operations about the lips are embraced under the general name of cheiloplasty; those upon the cheeks are termed genioplastic.

The necessity for such operations arises from various causes, not the least frequent of which are sections made by the knife of the surgeon. Reference to Plate VII. exhibits five cases; the first resulting from salivation, the second from an ulcer, the third, fourth, and fifth due to operations for the removal of cancer.

The first of these (Fig. 1) is described as having been a shocking deformity. The operation for its relief was performed by Professor Mütter, the practice being as follows. Having first extracted the useless teeth of the upper jaw, which would have prevented the proper adjustment of the flaps, or induced their ulceration, the edges of the ulcer were freshened, and the integuments detached from the side of the jaw. Two incisions, one above and one below the break, as seen in the figure, were made, so as to form four flaps. These were now allowed to fall together, and were united in the line of the teeth as far forward as the natural angle of the mouth. The result was entirely satisfactory.

In studying this case, the reader will remark that while the mode of section, or making the flaps, most happily meets the indications as filling up the seat of the original lost tissue is concerned, yet this is only done by making two other defects, one above, the other below. Such defects, however, prove, in healthy tissue, of no great consequence; granulations, quickly springing from the whole circumference of such wounds, supply the lost tissue: indeed, in the author's experience he has found that, as a rule, the tendency in these fresh parts is to so rapid a repair and cicatrization that frequently the line of the artificial union is torn apart.

Fig. 1 may be studied from another stand-point. In a case operated on lately, very similar to the drawing, where the neighboring tissues were loose and free in character, the writer secured an admirable result by simply dissecting the parts from the bone, freshening the edges, and uniting them by the ordinary hare-lip pin, supporting the whole with straps of adhesive plaster passed from beneath the jaw to the side of the head; the parts at first looked much stretched, but soon accommodated themselves.

Still another mode of performing such operations is after the manner of Tagliacotius. Freshening the edges as before, map out, by means of a piece of card-paper, the size of a flap required to fill up the gap; next lay this upon the arm, and, dissecting from the integuments its size, supported by a pedicle, fix it in the break by means of stitches of the interrupted suture. To do this, the arm is to be brought over the head, and thus supported until union is secured, when the pedicle is to be detached, and the parts trimmed to suit.

Subfig. 2, constituting a second study, represents an operation performed by Mott for the relief of an anchylosis of the jaw dependent on cicatrization of the mouth, together with the restoration of a part of the cheek. 1, exhibits cicatrix arising from an ulcer. This was entirely excised, leaving an opening in the cheek. 2, tongue-shaped flap cut to fill up the opening, this being rotated upon its base.

Subfig. 3 represents an operation performed by Professor Pancoast for the removal of an extensive cancer, and the formation of a new lower lip. The disease is shown circumscribed by a curvilinear cut. A vertical incision in the median line of the chin extended from the cut nearly to the os hyoides, and another, which was horizontal and parallel to the base of the lower jaw, formed four flaps. The angles of the flaps being removed, the upper (1, 2) were raised to the proper level, and united by the twisted suture on the median line, when the lower (3, 4) were also united on the median line so as to cover the front of the chin.

Subfig. 4 represents a similar case, treated by the operation of Chopart. The lines show the idea of the incisions. 2, 4, circumscribe the disease. 1, 5, 3, 6, show vertical cuts. The diseased part, all above 2, 4, being removed, the integuments are loosened from the lower jaw, and simply lifted, being retained in the new position by hare-lip pins, or by other convenient means. This operation occasionally answers very well. In certain instances, however, where, for example, it has been necessary to stretch the parts, much cicatricial evulsion is apt to occur.

Subfig. 5 represents the same position of the disease, treated after the manner of Lallemand. 1, the remaining portion of the lip, which is to be drawn over to the angle of the mouth at 2. A flap, formed of the integuments of the neck, having been dissected off, is shown as being partially rotated on its base, and about to be carried up to cover the deficiency. The wound on the neck may either be approximated at its edges or be left to heal by granulation.

In epithelial cancers quite as large as those represented in Figs. 3 and 4, the author has succeeded in making perfect operations by practising the manipulation of Malgaigne. This consists in removing the diseased mass by a simple V-incision; the angles of the mouth are next enlarged by horizontal cuts, and the V drawn together and united in the middle line of the face. In the cases alluded to, a pin was always placed at each corner of the mouth; as the result of this, some little puckering is produced, but, in return, it eases the strain on the middle line, and itself disappears after a very few months.*

* The lower lip, from its conspicuousness, its utility in articulation, and also in the prevention of an involuntary and incessant flow of saliva, forms a very important portion of the face. Unfortunately, it is exceedingly prone to diseases of various kinds, especially tumors and ulcers, requiring for their relief the removal of the whole, or a portion, of the organ involved. It would be worse than useless to enter into a description of all the operations that have been devised to remedy its loss, but a brief sketch of the most novel and

Plate VII.

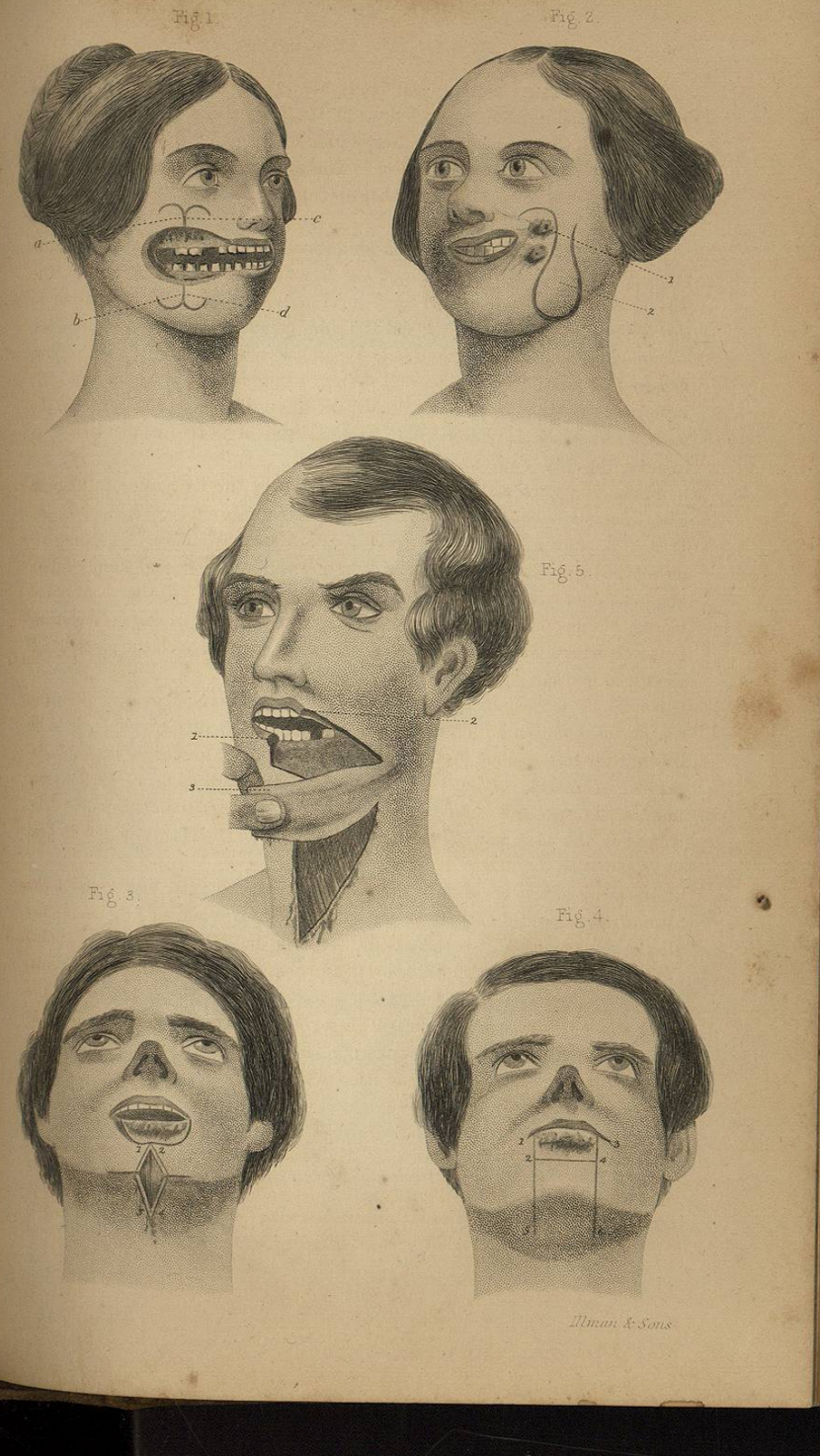


Fig. 480 exhibits conditions met with almost every day. Such ulcerations being esteemed of cancerous signification, are commonly treated by excision.

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important may prove useful and interesting to those not familiar with this department of plastic surgery.

Chopart's Operation.—This operation consists in making, on each side of the diseased tissue, a perpendicular incision, extending from the margin of the lip to a point below the base of the lower jaw. Dissecting up the flap inclosed between the incisions, he carefully removed from its upper margin all the affected tissue, either by a *transverse* or a *curvilinear* cut. Then, pulling upon what remained of the flap, he brought its upper edge to the level of the margin of the natural lip, and there retained it by suture, straps, and placing the head of the patient in such a manner as to prevent all strain upon the part. This method, though apparently simple and easy of execution, does not generally answer, in consequence of the subsequent contraction of the tissue.

Horn or Roonhuysen's Operation.—If the part to be removed be small, the common V-shaped incision is sufficient, and the parts may be brought together as in the operation for hare-lip; but where the mass is large, this process is sure to diminish the orifice of the mouth and thus give rise to deformity and inconvenience. To obviate all this difficulty, it was proposed by Horn to detach the adjacent parts by free dissection from the maxillary bones, which would of course afford more material for the lip. The objection to this method is, that in many cases the orifice of the mouth is rendered so small as to be almost useless, besides presenting great deformity.

Operation of Dupuytren.—This, in ordinary cases, is nothing more than cutting away by a semi-elliptical incision all the diseased tissue. Granulations spring up from the margin of the healthy skin, occupy in part the place of the original lip, and conceal to a certain extent the deformity. It is only in mild cases, however, that such a measure could succeed.

Celsian Operation.—Having carefully removed the diseased part by a V-shaped incision, he proposed to divide the tissue remaining *horizontally*, carrying the cuts as far into the cheek on each side as might be deemed necessary, after the manner of Horn; but, in order to take off the strain from the flaps, he made a *semilunar incision* in the cheek, just beyond the base of each. This enabled him to bring the parts together without difficulty; and the only objection to this operation is the danger of wounding the larger vessels, nerves, and ducts of the cheek, in making the semilunar incisions.

Operation of M. Serres.—If the disease, as is sometimes the case, be confined to the integuments and subjacent muscles, leaving the mucous lining of the lip sound, Serres cuts away only the affected part, and then turns the mucous membrane over the margin of what is subsequently to form the lip. A few stitches are sufficient to hold it in place, and, as union by the first intention usually occurs, a very natural and useful organ may thus be made. This method, however, will only answer in cases of superficial and recent disease.

Operation of T. W. Roux.—After removing the affected tissues, and forming suitable flaps of the adjacent parts, M. Roux takes away with the saw or cutting instruments the prominent centre of the maxillary bones, so as to make room for the proper and easy adjustment of the integuments intended to replace the organ destroyed. This operation is barbarous, because unnecessarily severe.

Operation of P. Roux.—Professor Roux, determined to surpass his namesake, saws out an inch or more of the bone, and then, by drawing the lateral flaps toward each other, diminishes the breadth of that part of the face involved in the disease. Then, detaching the flaps, he draws them across the opening in the bone, and the sutures which hold the soft parts are generally sufficient to hold the bones in their proper places.

Operation of Mr. Morgan.—This consists in *first* removing the entire lip by a semilunar incision, the concavity of which is uppermost; and, *second*, in making an incision also curvilinear and parallel to, and about an inch or more below, the first. The skin included between the two is then carefully detached, except at its extremities, and lifted into the place occupied by the diseased lip.

Taking as example the two shown in the diagram, the manner of removal is portrayed in the circumscribing lines, the remark being to add, however, that such lines are to be twice or thrice as widely separated from the lesion. The after-treatment consists simply in approximating the parts by the use of the pin and figure-of-8; adhesive strips being used, or not, as may be found indicated.

Fig. 481 exhibits disease involving the entire lower lip, and compelling its removal. To accomplish the necessary end, namely, to ablate the lesion and restore the lip, various means are employed. (See foot-note.) By the

Operation of M. Blasius.—M. Blasius has performed a very simple operation when the tumor was large; and, according to his statement, with decided success. After removing the diseased mass by a common V-shaped incision, he next divided the integuments along the base of the lower jaw by two incisions, which commenced at the entering angle of the V, and extended an inch or more in the direction specified. Lifting the flaps, he made them occupy the place of the original lips.

Operation of Dieffenbach.—This surgeon has recommended an operation apparently hazardous and severe.

"Having pared away the useless remains of the former diseased lip, or separated the cicatrized margin, a horizontal incision, about two inches long, is carried from either angle of the mouth outwards, through the cheeks, so as to throw the mouth widely open. The length of these incisions must be regulated according to the width of the mouth; or, as a general rule, the combined incisions must somewhat exceed in length the breadth of the upper lip. From the outer point of each of these, another incision is next carried obliquely downwards and toward the median line; the section in this case likewise extending through the whole thickness of the cheek. Thus by means of the first operation for paring the cicatrix, and by the succeeding horizontal and vertical incision, a flap will be prepared on either side to replace the defective lip; this flap is of a quadrangular form, and maintains a connection of more than one inch wide with the soft parts covering the tissue of the lower jaw. It may be useful further to separate the mucous membrane at its attachment to the gums, to allow of the more ready traction of the flaps."

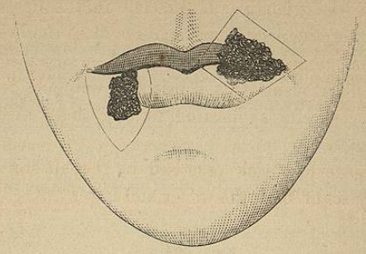
The severe injury inflicted on the facial nerve, the large arteries and veins, and possibly the parotid duct, has rendered this operation anything but popular.

Operation of Liston.—This consists in first removing the diseased mass by a horizontal and two perpendicular cuts, or by one curvilinear in shape; and, second, in detaching a flap from the chin and neck, twisting it on its pedicle, placing it in the seat of the original lip, and there retaining it by suture. After adhesion has taken place, the pedicle is divided, and a wedge-shaped piece removed so as to allow the flap to be laid down smoothly. This method, it is obvious, is frequently applied to the restoration of other parts, and will answer here exceedingly well in many cases. Dr. Mütter, however, prefers the following operation, "as there is *less scar*, and less risk of sloughing of the flaps."

Dr. Mütter's Operation.—Having first removed the diseased mass by a semi-elliptical incision, two slightly curved incisions are carried from the centre of this line, downwards and outwards, to the base of the inferior maxillary bone. Then, from the terminal extremities of these incisions, two others are carried upwards and outwards along the base of the lower jaw until they reach a point opposite the initial and terminal points of the original semilunar incision. Two quadrangular flaps are thus marked out, and immediately detached from the subjacent bones. These flaps are then raised and placed in the position originally occupied by the lower lip, and then united to each other at the median line, and also by their lower thirds to the triangular piece of integument (as between the two lines which started from the centre of the semi-elliptical incision), by means of the twisted suture. By the elevation of these flaps, a raw surface is left on each side to heal by the modelling process or by granulation.—MÜTTER.

diagram are shown the outlines of an operation known as Serres's. In this mode it is seen that the tissues of the cheeks are utilized. Fig. 482 shows the disease removed, and the wounds dressed. A marked objection to this

FIG. 480.



operation is inability to gain such character of lower lip as shall control the direction of the saliva, or permit of true and full approximation with the superior lip. In looking at the restoration, the reader is to observe the

FIG. 481.

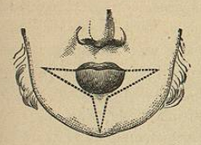
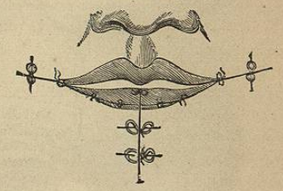


FIG. 482.

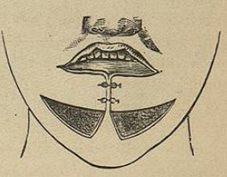


manner adopted of covering the same surface of the free border by stitching to the skin the mucous membrane.

Fig. 483 exhibits a lower lip removed, and lines of incision practised by Mütter for the restoration of the lost part from the chin. Fig. 484 shows

FIG. 483.

FIG. 484.



the flaps dissected and raised into place; the triangular spaces being left to heal by granulation.

A modification made by the author on the sections of Mütter—cuts of which are shown in a clinical report published in the *Medical and Surgical*