**Rhinoplastic operations : with a description of recent improvements in the Indian method / by D.F. Keegan.**

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IN THE

INDIAN METHOD.

BY

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*WITH TWENTY-ONE PHOTOTYPE PORTRAITS AND ELEVEN ENGRAVINGS IN THE TEXT.*


LONDON:

BAILLIÈRE, TINDALL AND COX,

20 & 21, KING WILLIAM STREET, STRAND.

[PARIS AND MADRID.]

1900.

LONDON:
PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,
STAMFORD STREET AND CHARING CROSS.

# PREFACE.

During my service in India I often had occasion to perform operations for the repair of mutilated noses, and as my experience increased, I found that certain modifications of the ordinary procedure added to the efficiency of the results. The following pages have been written for the purpose of bringing these modifications more fully than hitherto under the notice of surgeons, especially officers of the medical services in India, where traumatic mutilation of the nose is vastly more common than in Western Europe. As will be afterwards explained, a large proportion of the noseless patients in India are women, almost invariably of the lower castes, who, when they are in need of medical or surgical aid, have no hesitation in attending the dispensaries and hospitals superintended by civil surgeons throughout India. Among "purdah nashin" women such mutilations are excessively rare. These latter are debarred by religious prejudice and traditional usage from consulting male practitioners, but in most cases their relatives will consent to the calling in of the female practitioners working under that beneficent organisation, the National Association for Supplying Female Medical Aid to the Women of India,

popularly known as the Countess of Dufferin's Fund. I am aware that these ladies occasionally undertake rhinoplasty, and I therefore look forward to having some of them among my readers.

My rhinoplastic operations were performed in the Charitable Hospital at Indore, Central India, where I was residency surgeon for fifteen years.

East India United Service Club,
London,
*October*, 1899.

# RHINOPLASTIC OPERATIONS.

Diseased, mutilated, or greatly misshapen conditions of the nose seldom fail to produce extreme disfigurement, and a variety of operations have been proposed with a view to remedying these deformities. Congenital malformations of the nose are rare, but instances have been recorded in which fissure of the nostril existed, and was satisfactorily closed without difficulty. Surgical intervention may also be necessitated by lateral deviation of the cartilage, and by the grotesque appearance due to lipoma nasi, a condition in which the skin undergoes chronic inflammatory hypertrophy, and the sebaceous glands are greatly enlarged, so that the part assumes a mottled red colour, and becomes irregularly swollen and lobulated. This hypertrophy usually occurs in middle life, and is fortunately amenable to surgical treatment. The operation consists in carefully dissecting the thickened integument off the nasal cartilages, and freely removing the redundant tissue without cutting into the nostril, the safety of which may be provided for by an assistant holding his finger in it so as to be able to warn the operator of the approach of the knife. Cicatricial contraction helps the effect of the operation, in addition to which the thickened structures have a tendency to diminish in bulk, and the ultimate result is usually a great improvement in the patient's appearance.

Noses, the skin of which remains sound and

healthy, may be seriously misshapen in two diametrically opposite ways, for on the one hand excessive development of the nasal bones may cause a preternatural arching; and, on the other hand, the bridge may be almost on a level with the face, giving rise to what is called a depressed or saddle-shaped nose. In either event the countenance is far from comely, but surgical skill has found means of meeting the difficulty. In 1898 Dr. Joseph published in the *Berliner Klinische Wochenschrift* of October 3, an account of his method of rectifying an excessively arched nose. The superfluous skin and cartilages were removed by four incisions, which formed two angles with the vertex in the median line of the nose; then the unduly prominent nasal bones were reduced with the chisel, and finally the bridge of the nose was shortened by excising a wedge-shaped portion of bone. Sutures were then applied, the wound healed by first intention, and the result was highly gratifying to the patient. Dr. Joseph was not at that time aware that such an operation had been previously undertaken, but he afterwards learned that a case of the same kind had been published in the *New York Medical Journal* of October 22, 1892, by Dr. Robert F. Weir, professor of surgery, College of Physicians and Surgeons, New York. In this article Dr. Weir states that in 1885 he was called upon to relieve the distress that was occasioned in the mind of a gentleman, well known in social circles, by the presence of a nose which he considered, with some justice, to be unduly large. This disfigurement was intensified by a somewhat receding chin and diminutive mouth, and the patient had become so much perturbed in mind concerning the unsightliness of his appearance that it seemed to his medical advisers and relatives essential to the preservation of the balance of his mind that some attempt should be made to remove what he persistently dwelt upon as a distressing deformity.

Dr. Weir took out a triangular piece of the septum narium, fully a quarter of an inch in width at the columna, its apex running up and encroaching upon the ethmoid septum. The nose, moreover, at this point was forced downwards towards the face, and the cartilage and the divided columna sutured together by fine sutures. To accommodate this sinking of the nose, the nasal bones at their lower borders were also crowded backwards and inwards by means of Weir's nose forceps (one blade inside the nose, and the other outside), and were then to a slight degree flattened. This operation was done with gratifying success. The nasal prominence at the tip, particularly the unsightly portion in the otherwise fairly straight nose, was diminished, and the patient's mental relief was correspondingly great for a time. However, at the end of a couple of months, with the aid of incessantly looking at himself in the glass, he arrived at the conclusion that something more should be done to his nose—this time that the slightly increased breadth of the nostril should be remedied. This was very readily accomplished by an incision along the curve made by the attachment of the nose to the cheek, and there slicing off a small bevelled portion of the nose, and reuniting the divided edges by sutures. This was followed by no apparent cicatrix whatever.

An operation for depressed nose has been described in the *Lancet* of February 17, 1894, by Mr. S. K. Ellison, of Adelaide, South Australia. A woman consulted him in March, 1886, on account of occlusion of the nares and depressed nose. She stated that recently she had had two operations performed, and he learned that one was a Rouge's operation for ozæna, and the other a modified Fergusson's operation for raising the nose, which was not a success. Mr. Ellison effected an opening into the nares; indiarubber tubing was then introduced, and retained for a considerable time.

On reading of the attempts of various surgeons for the relief of this deformity by the insertion of metal, vulcanite, or amber plates, it occurred to him that their want of success might have been due to the plates not being perforated, as he had not heard or read of any such plates being used. He therefore devised a perforated gold plate for use in this case. On June 6, 1886, he undertook the following operation for supplying an artificial bridge to the nose. An incision with a tenotomy knife was made on either side, and across the nose a couple of lines below the lower part of the depression. The flap of integument thus marked out was raised sufficiently to permit the plate to rest in the position desired on the subjacent tissues. There was very little bleeding, and what there was could be easily subdued by hot water. The flap of integument was then drawn over the plate and carefully sutured with horsehair along the line of the incision ; a thread of catgut as a drain was inserted in the lower portion of the incision and removed after twenty-four hours. A cleft palate hook was found of great use in manipulating the flap, as the necessity for employing forceps, and the consequent risk of bruising the integument, was thereby avoided. Collodion was painted over the line of incision, except in the position of the catgut drain, and a gauze dressing was applied over all. Healing took place by first intention, and the sutures were removed on the fifth day. On December 5, 1893, Mr. Ellison communicated with the patient, who then resided in a neighbouring colony, and in response to his inquiry as to whether she had experienced any inconvenience from the metal plate introduced by him seven years previously, she replied that she had had "no inconvenience from the plate whatever." The operation was therefore completely successful. A very similar operation was performed in 1895 by Dr. W. W. Keen, professor of surgery in

the Jefferson Medical College, Philadelphia, U.S.A.; a full account of it will be found in a small book published by him in 1896. The patient was a woman twenty-five years of age, whose nose had been fractured eighteen years previously as the result of a fall. The bridge of the nose was almost entirely obliterated, being scarcely more than an eighth of an inch above the level of the cheek, so that her nose seemed to be tipped upwards, and her mouth was also made very oblique. There was no impairment of either the freedom of breathing or the sense of smell. Dr. Keen decided not to interfere in any way with the bones, but to restore the normal contour of the nose by the insertion of a metallic substitute. A cast of the nose having been taken, a wax nose of satisfactory shape was built up upon it, and from this as a model an artificial bridge was constructed of two silver plates soldered together, the posterior plate matching the shape of the bones, and the anterior, a somewhat smaller one, corresponding to the desired outline of the remodelled nose. The plates thus soldered together contained a completely closed hollow interspace, which made the piece to be inserted much lighter than it otherwise would have been. All round the margin a row of small holes was drilled, which Dr. Keen expected would enable the plate to be firmly fixed in position by granulation tissue pushing through the apertures and being probably transformed into fibrous tissue. The plate was then polished and heavily gilt. A transverse incision was made just above the ala of the nose, and the superficial structures loosened as far as the lower border of the frontal bone on each side, and slightly towards the tip, below the transverse incision. The object of loosening the soft parts towards the tip was to prevent the edge of the plate from protruding. The gilt plate was then inserted, and the wound closed by Halsted's subcuticular suture. The sutures were

removed six days afterwards. The patient's highest temperature was 99·4°. A bleb formed over the bridge of the nose, but soon healed. Dr. Keen's account of the case was published ten months after the operation, up to which time the metal plate had never caused the slightest inconvenience, and on taking hold of the nose with the finger and thumb the plate seemed to be very firmly fixed. These embedded metal plates are of comparatively modern introduction, but external silver plates have from time immemorial been worn for the purpose of concealing wounds and deformities. Ambroise Paré, writing in the sixteenth century, mentioned that a patient on whom the Taliacotian operation was successfully performed, had for some time previously worn a silver nose, and while I was at Indore a Greek merchant living there told me that the Sultan of Turkey supplied silver noses to some of his soldiers whose noses had been cut off by their Bulgarian captors during the war between Russia and Turkey in 1876. My informant said that the men were to be seen walking about Stamboul wearing silver noses. I do not vouch for the truth of the story, but if the statement was correct, there must have been an opportunity for rhinoplasty on a considerable scale.

Dr. Julius Wolff, of Berlin, has described in the *Berliner Klinische Wochenschrift* of February 5, 1894, a totally different method of correcting depression of the nose. He removes a small plate from the frontal bone without detaching it from the skin, and, taking advantage of the looseness and extensibility of the subcutaneous tissues, he slides the little plate of bone downwards between the eyebrows into the required position. He states that portions of bone may be transplanted in this way without losing either their vitality or their bony structure, and he claims that this application of osteoplasty has yielded excellent results in deformity of the nose. The novelty of the foregoing cases is the

principal reason for their being mentioned here; they are typical instances of the ability of the surgeon to correct bodily defects, but would not generally be considered as examples of rhinoplasty. Similarly, the treatment of recent fracture of the nose lies altogether outside the design of the present work, and no more than a passing reference will be made to the various destructive ulcerations of the nose, which, as is well known, depend for the most part either on lupus, tertiary syphilis, carcinoma, or rodent ulcer.

Injuries of the face being of such frequent occurrence, and being, moreover, so important from their influence on the personal appearance of the sufferer, it is fortunate that the soft tissues of this region are very tolerant of surgical interference. The operation for harelip, for instance, is a simple and successful one; and many cases are recorded in which replacement of entirely severed portions of the face and ears has been followed by firm union. The principal authority in this connection is perhaps Dr. Hoffacker, who was officially appointed to attend the duels which took place among the students at Heidelberg. Broadswords were the weapons used in these encounters, and Hoffacker, writing in 1828, has described sixteen cases in which portions of the nose, lips, and chin became re-united after having been sliced off. In one of these the tip of a man's nose fell under a chest of drawers and was not recovered for some time; in another, when it fell to the ground it was picked up by a dog which happened to be present, but nevertheless in both instances the detached parts adhered when returned to their original situations. Several successful results under similarly unpromising conditions have been published in England quite recently. In the *Lancet* of June 4, 1898, it is stated that the greater portion of the pinna of a boy's ear was bitten off by a horse and lay for some time in the stable yard;

when found it was sutured in position and in seven weeks was soundly re-united. In the same journal of March 11, 1899, there is an account of a man who cut off 1¼ inch of the skin of his nose while sharpening a knife; the piece was wrapped in white kitchen paper and carried to the surgeon's house, where the patient had arrived previously; it was not re-applied until fully thirty-five minutes after the accident, but nevertheless adhered perfectly.

These remarkable cases, however, are of rare occurrence. In Europe and America it generally happens that the patients for whom rhinoplasty is required have suffered from the ulcerative diseases of the nose to which allusion has already been made, for if such disease can be arrested by appropriate treatment, and shows no sign of recurrence after the lapse of a sufficient interval, a plastic operation will often have the effect of rendering the features passable. In India, on the other hand, as will be presently explained, cutting off the nose is frequently resorted to, not only among organized belligerents, but as a means of avenging personal grievances. It is therefore obvious that as a rule the deficiency has to be made good by transplanted tissue, and, according to the locality from which this latter is taken, three different systems of rhinoplasty have received the names respectively of (1) the Italian method, (2) the French—sometimes also called the German—method, and (3) the Indian method.

The literature of rhinoplasty is now of considerable extent. Numberless modifications of the three leading types above mentioned have been suggested, and there is ample evidence that even as late as eleven years ago, not to speak of earlier periods, the results of rhinoplastic operations sometimes fell short of the expectations of the surgeons. For instance, the late Mr. F. C. Skey, of St. Bartholomew's Hospital, who was president of the Royal College of Surgeons of

England in 1863, expressed himself as follows in his "Principles and Practice of Operative Surgery" (2nd edition, 1858, p. 520)—

"No condition of face can perhaps be more repulsive than that in which the eye at once penetrates the commonly hidden organization of the nose and fauces, except, perhaps, that compound of evils which results from a total failure of the attempt to remedy it. And such is usually the consequence of a first ill-planned, unstudied operation which has for its object the imitation by art of the form and outline of the natural organ. There is no operation in surgery that requires more calculation and careful study than this. . . . The rhinoplastic operation should be solicited by, and not forced or even urged on, a patient. . . . It will occasionally happen, after some days from that of the operation, that the new structure begins to lessen in size, and continues to diminish till it becomes almost absorbed. My experience in nose making, though not small, is not sufficiently great to enable me to explain this fact, whether owing to the small size of the stalk, or to the want of general activity in the circulation."

Mr. Skey's description of a rhinoplastic operation refers almost exclusively to the Indian one. In the forehead flap figured by him, the corners which ultimately adjoin the margins of the nostrils are not angular, but are freely rounded. As will be seen presently, the form of flap employed by me differs considerably from this. In Mr. Christopher Heath's "Dictionary of Practical Surgery," published in 1886, the article "Rhinoplasty" (vol. ii. p. 346) is by Mr. W. Johnson Smith, who says—

"The soft parts around the nose are very vascular and well organized, and thick flaps, composed of several layers of varied tissue, may be brought over the defect from almost every quarter; but, notwithstanding this, it too often happens that, as was pointed out by Denonvilliers, a repulsive deformity has been converted into one that is ridiculous."

Mr. Johnson Smith, however, adds that if the bones of the nose be preserved there is always a good chance of restoring a prominent and sightly organ, though most of the skin may have been destroyed. Again, Mr. Timothy Holmes, of St. George's Hospital, late vice-president and professor of surgery and pathology to the Royal College of Surgeons of England, in his

"Surgery, Its Principles and Practice," published in 1888, says at page 947—

"The operation of restoring a nose which has been cut off or lost by lupus or syphilis, is one which is little in favour with most surgeons of the present day, since it is found that the new nose, being formed only of skin, generally either withers away or remains flat on the face, and in either case the patient's appearance is not improved. Besides, in the usual method of operation, the flap being taken from the forehead another scar is added to the previous deformity. . . . Rhinoplasty is very liable to failure from sloughing of the flap, from want of union of the edge (especially when the tissues are cicatricial from old lupus), from erysipelas, and from secondary hæmorrhage. It is therefore not an operation which the surgeon should recommend. . . . In the present day, when so many new materials are in use for masks, it will be found that a person who can command the necessary assistance will derive much more advantage from the services of the mechanician than of the surgeon."

From the foregoing it will be seen that three standard treatises by London surgeons are in substantial agreement on a matter of opinion, but an experience of rhinoplasty in India, extending over more than twenty years, has nevertheless convinced me that the Indian operation, performed as hereinafter described, always affords a good prospect of success, and that a nose restored in this way is far superior to any artificial substitute. At the same time it must be borne in mind that my patients were not victims of cancer, syphilis, etc., but healthy persons whose noses had been cut off. I have invariably made use of the Indian operation, being confident that a flap taken from the forehead is a much better covering for the nose than one taken either from the arm or the cheek.

The preceding quotations from surgical works are not to be understood as implying that all London surgeons were unfavourable to rhinoplasty. Sir John Eric Erichsen, in his "Science and Art of Surgery" (10th edit., 1895, vol. ii. p. 660), after enumerating several causes of failure, the chief of which is gangrene of the flap, arising from the root being too narrow or too tightly twisted, says that the operation by means

of the forehead flap will usually be attended with very satisfactory results.

## I.—The Italian Method.

Restoration of a lost nose by means of a flap of skin taken from the arm is an operation of Italian origin. The first notice of it in medical literature is a brief reference which occurs in an anatomical work by Alexander Benedictus, published in Venice in 1497; but there is historical evidence that an operation of this kind was performed more than fifty years before that date by a Sicilian surgeon named Branca or Brancas. Various allusions to the operation are to be found in surgical works of the sixteenth century, at the very end of which, namely in 1597, an elaborate Latin treatise on it was brought out in Venice by Gasparo Tagliacozzi or Tagliacotti, a surgeon of Bologna, whose name was Latinized as Taliacotius, and is perpetuated in the phrase "Taliacotian operation." This book is entitled "De Curtorum Chirurgia per Insitionem," and is a folio volume of 298 pages, including 22 full-page plates; it is divided into 45 chapters, and contains a great deal of irrelevant matter; it was reprinted in Frankfort in 1598, and a reissue in octavo, edited by Dr. M. Troschel, appeared in Berlin in 1831. The special feature of the operation is that when the flap of skin is raised from the upper arm a pedicle is left which is not divided until after the free portion of the flap has united with the nose. This necessitates the arm being held in contact with the face for about a fortnight, the palm of the hand being placed on the top of the head. Tagliacozzi is said to have performed this operation many times, but after his death in 1599 at the age of fifty-three years, it seems to have been seldom resorted to, although it was favourably regarded

by Carl Ferdinand Von Graefe, a Berlin surgeon, who died in 1840. In 1877 it was revived by Sir William Mac Cormac, Bart., consulting surgeon to St. Thomas's Hospital and president of the Royal College of Surgeons of England. The patient was a girl sixteen years of age, the tip of whose nose had been completely lost in early infancy by sloughing after the injection of a solution of pernitrate of iron for the cure of a nævus. In a paper read before the Clinical Society of London on May 11, 1877, and published in the Transactions

Fig. 1.

of the Society for the session 1876–77, Mr. Mac Cormac (as he then was) gave a full account of the operation, the principal part of which will be found in the Appendix. On this occasion he minutely described his method of keeping the arm in contact with the face, and I have to thank him for the loan of the accompanying engraving, which shows the patient wearing the apparatus, and which served to illustrate a paper on "The Value of Plastic Methods in Surgery" published by Sir William Mac Cormac in

*Treatment* of March 23, 1899. He followed up this Italian or Taliacotian operation by a second one performed at no long interval on a girl whose nose had been bitten off by a dog, and since the publication of these cases some modifications of the method followed by him have been adopted by various surgeons. Mr. Hardie, of Manchester, took the flap from the flexor surface of the thumb, and Dr. Warren, of Boston, U.S.A., raised it from the anterior portion of the forearm about two inches above the wrist. Perhaps the most recent memoirs on the subject are those of Dr. Paul Berger, surgeon to the Hôpital de la Pitié and professor of clinical surgery in the Paris Faculty of Medicine. In a case described by him in a pamphlet published in 1896, the operation was performed on December 4, 1895, and the pedicle of the flap was divided on December 14. The account proceeds: "Formation des narines, des ailes du nez et de la sous-cloison" on January 7, 1896. The result was satisfactory. On July 11, 1899, at a meeting of the Paris Academy of Medicine, Dr. Berger showed three patients on whom he had operated by "la méthode de Tagliacozzi, modifiée par Carl Ferdinand de Graefe, méthode que, depuis plus de vingt ans, je cherche à tirer de l'oubli où elle est injustement tombée." The scar left on the forehead by the Indian operation induced him to prefer the Italian method, but he freely acknowledged that of the two operations the Indian one gave far the better nose. The passage in question occurs in the *Bulletin de l'Académie de Médecine* (Seánce du 11 juillet, 1899, p. 67), and is as follows :—

"Il est certain que dans la méthode indienne, le lambeau frontal donne des résultats plus parfaits que ceux que donne le lambeau brachial; la fermeté et l'épaisseur de la peau de la région frontale, l'irrigation sanguine du lambeau qui reste presque normale, font que ce lambeau se présente dans des conditions de résistance, de solidité, de vitalité très supérieures à celles du transplant brachial."

Dr. Berger goes on to describe his apparatus for

fixing the patient's arm and head together while union is taking place between the skin of the arm and the nose; young persons, he says, so soon become reconciled to the constrained position that they suffer practically no inconvenience, but with adults this tolerance is greatly diminished, and for that reason the operation would be almost impossible for patients of forty years old and upwards.

## II.—The French Method.

The essential principle of this operation consists in the making of a new nose by means of lateral and facial flaps. Numerous modifications in the details have been suggested by various surgeons, among whom may be mentioned Nélaton and Denonvilliers in France, Dieffenbach and Langenbeck in Germany, Professor Syme, Mr. John Wood, and Sir William Fergusson in Great Britain. The patient is no doubt spared the discomfort of the constrained position in which the arm is necessarily maintained during the Italian operation, and the frontal scar of the Indian operation is avoided; but the ultimate results are decidedly inferior to those obtained by the Indian operation when efficiently performed. Positive evidence to this effect was supplied ten years ago by an experienced operator, Assistant-Surgeon Tribhovandas Motichand Shah, Chief Medical Officer, Junagadh, whose "Rhinoplasty," published in 1889, is a description of upwards of a hundred cases treated by him during a period of four years. This work goes very minutely into operative details, and is accompanied by a supplementary volume containing only portraits of patients. The explanation of his large number of cases was that when he entered the service of the Junagadh State the Makràni outlaws were in the habit of mutilating defenceless ryots. He operated on the noses of some of the victims, and

numbers of patients (especially females) in a similar plight subsequently came to him from all parts of Kàthiàwàd (a peninsula in the west of India, between the Gulfs of Cutch and Cambay). In his first ten or eleven cases he used cheek flaps, but the results did not satisfy him, and he afterwards used forehead flaps. On page 5 he wrote—

"I have never taken a flap from the arm. It is likely to leave the least exposed disfigurement, but it is so awkward, painful, and trying, that there are great chances of failure. I observed it once attempted, at Ahmedabad, on a female, who suffered such agony from the position of the limb, that she tore away the flap in the frenzy of pain. During the four years of my studentship at Bombay, I had seen but one case of rhinoplasty by a forehead flap."

## III.—The Indian Method.

In the Indian operation the deficiency of the nose is supplied by means of a flap of skin taken from the forehead. It was first made known to European surgeons by the following letter, which was printed in the *Gentleman's Magazine* for October, 1794 (p. 891). The editor of this magazine was "Sylvanus Urban." The letter was accompanied by a full-page plate, the greater part of which was occupied by a portrait of the patient after his recovery from the operation; it also contained Figs. 1, 2, 3, and 4 mentioned in the letter. The shape of the forehead flap differed considerably from that which is figured in many English surgical text-books, and was in fact very similar to that which I have been in the habit of using, except that the pedicle or attachment was disproportionately narrow. The appearance of the patient indicated a very successful result. There does not seem to be any clue to the identity of the writer, who signs himself "B.L." Further particulars of the history of the operation will be found in the Appendix.

October 9.

Mr. Urban,

A friend has transmitted to me, from the East Indies, the following very curious, and in Europe I believe unknown, chirurgical

operation which has long been practised in India with success: namely, affixing a new nose on a man's face. The person represented in Plate 1 is now in Bombay.

Cowasjee, a Mahratta of the cast of husbandman, was a bullock driver with the English army in the war of 1792, and was made a prisoner by Tippoo, who cut off his nose and one of his hands. In this state he joined the Bombay army near Seringapatam, and is now a pensioner of the Honourable East India Company. For above twelve months he remained without a nose, when he had a new one put on by a man of the brickmaker cast, near Poonah. This operation is not uncommon in India, and has been practised from time immemorial. Two of the medical gentlemen, Mr. Thomas Cruso and Mr. James Trindlay, of the Bombay Presidency, have seen it performed as follows: A thin plate of wax is fitted to the stump of the nose, so as to make a nose of a good appearance. It is then flattened and laid on the forehead. A line is drawn round the wax, and the operator then dissects off as much skin as it covered, leaving undivided a small slip between the eyes. This slip preserves the circulation till an union has taken place between the new and old parts. The cicatrix of the stump of the nose is next pared off, and immediately behind this raw part an incision is made through the skin, which passes around both alæ and goes along the upper lip. The skin is now brought down from the forehead, and being twisted half round, its edge is inserted into this incision, so that a nose is formed with a double hold above, and with its alæ and septum below fixed in the incision. A little terra Japonica is softened with water, and being spread on slips of cloth, five or six of these are placed over each other to secure the joining. No other dressing but this cement is used for four days. It is then removed, and cloths dipped in ghee (a kind of butter) are applied. The connecting slips of skin are divided about the twenty-fifth day, when a little more dissection is necessary to improve the appearance of the new nose. For five or six days after the operation the patient is made to lie on his back; and on the tenth day bits of soft cloth are put into the nostrils to keep them sufficiently open. This operation is very generally successful. The artificial nose is secure, and looks nearly as well as the natural one; nor is the scar on the forehead very observable after a length of time. The picture from which this engraving is made was painted in January, 1794, ten months after the operation.

Fig. 1—the plate of wax when flattened.

Fig. 2 and 3—the plate of wax in the form of the nose.

Fig. 4—1, figure of the skin taken from the forehead; 2 and 3, form of the alæ of the nose; 4, septum of the new nose; 5, the slip left undivided; 6, 6, 6, the incision into which the edge of the skin is ingrafted.

Yours, etc.

B. L.

The first surgeon to make practical and successful use of this information was Mr. Joseph Constantine Carpue, a celebrated teacher of anatomy and surgery at a private medical school situated at 72, Dean Street,

Soho, London, standing on the site now occupied by the Royalty Theatre. Carpue had two patients without noses, both of them military officers, who came under his care in September, 1814, and in January, 1815, respectively. An abstract of his narrative of these cases is given in the Appendix. Since that time the operation has been very frequently performed, and more or less satisfactory descriptions of it are to be found in most of the systematic treatises on surgery. The first published account of my modification of the ordinary procedure appeared in the *Lancet* of February 21, 1891, and I have to thank Mr. Frederick Treves, consulting surgeon to the London Hospital, for incorporating it in his "Manual of Operative Surgery," brought out later in the same year. At the annual meeting of the British Medical Association, held in London in 1895, I gave a lantern demonstration of the results of my method of rhinoplasty, and an abstract of the description will be found in the *British Medical Journal* of October 12, 1895.

I have already said that in India cutting off a person's nose is frequently resorted to as an act of vengeance for some real or fancied wrong. In fact, the great majority of the victims are women who have incurred the jealousy of their husbands, for in India there is no divorce court for the native population, and among the lower orders a man who suspects his wife sometimes cuts off her nose, afterwards turning her adrift. Of course the husband's suspicions are not always well-founded, and the unhappy wife, mutilated without reason, is condemned to lifelong sorrow and degradation. For nose cutting the Indian Penal Code awards the punishment of imprisonment for a period from one or two years to seven, according to circumstances. Public opinion is generally on the side of the husband, and in Native States the punishment is usually much less—perhaps about six months'

imprisonment. Dr. Norman Chevers, in his "Manual of Medical Jurisprudence for India" (Calcutta, 1870, p. 487) says—

> "Cutting off the nose is a common punishment of sexual crime throughout India. This is evidently a very ancient custom; indeed, we have glimpses of it in Hindoo mythology. . . . Removal of the nose is, or was lately, a judicial punishment in Nepal. Hence the skill of native practitioners in the rhinoplastic operation."

He then goes on to quote instances of cutting off the nose. Mutilation is often also resorted to by dacoits, as exemplified at the late trials of dacoits at Oodeypore, where many of the witnesses against the dacoits appeared in court with mutilated noses. The mutilations by the Makràni outlaws in the Junagadh State have been already mentioned. Moreover, it is possible for the nose to be lost by an accident, such as the case of a person falling through a skylight, or it may be cut off with a sabre, or shot off.

It is impossible to conjecture with anything approaching accuracy the number of such mutilations inflicted in a single year throughout the length and breadth of India, but it is quite safe to conclude that it is very considerable, for I find that during the year 1897 there were 152 rhinoplastic operations performed in India, distributed as follows:—

| | |
|---|---|
| Medical Institutions in the city of Madras ... ... | 1 |
| Civil Hospitals and Dispensary, Madras Presidency ... | 3 |
| Dispensaries in the Province of Assam ... ... ... | 0 |
| Civil Dispensaries in Burmah ... ... ... ... | 1 |
| Dispensaries in the Punjab ... ... ... ... | 50 |
| Civil Medical Institution, City of Bombay ... ... | 2 |
| Civil Medical Institutions throughout Mofussil, Bombay | 15 |
| Civil Medical Institutions in North-West Provinces and Oudh ... ... ... ... ... ... ... | 67 |
| Civil Medical Institutions, Hyderabad Assigned Districts | 1 |
| Central India ... ... ... ... ... ... | 8 |
| Central Provinces ... ... ... ... ... ... | 4 |
| | 152 |

Riding through the native city of Indore, I have

in a single evening seen as many as three or four women with mutilated noses sitting outside their huts, and as there was no reason to suppose that the practice of cutting off the nose was more prevalent in Indore than in any other Indian city, this isolated example may be taken as a proof of its frequency. In the East a woman who has lost her nose is regarded as unchaste, is looked down on by her neighbours, and is an object of ridicule when she leaves the house, as for instance when she goes to the well to draw water. One may therefore imagine the lifelong misery entailed on an unfortunate wife, perhaps entirely guiltless, who has been the subject of mutilation, and it is easy to understand how great a boon to them a well-performed rhinoplasty must be. When a surgeon has the reputation of being successful in such operations, noseless women will travel long distances to seek his aid. A few days before my final departure from India, which took place in March, 1894, three women without noses presented themselves at the Indore Charitable Hospital, having travelled in company all the way from the same village, near Oodeypore, a distance of some three hundred miles. Cutting off the nose sometimes imparts to the features a slight resemblance to those of an ape, as will be seen in Fig. 6 A, on page 42.

Before proceeding to describe the various stages of my operation, it will be convenient at this point to show some results. The accompanying illustrations are printed from half tone process blocks, reproduced photographically from the original cabinet photographs taken by Lâlâ Deen Dayâl at Indore, and by Herzog and Higgins at Mhow, not far from Indore. As there has been no retouching either of the original photographs, or of the half tone blocks, the illustrations faithfully represent the appearance of the patients. For success in rhinoplasty, it is essential to have the forehead flap of a correct size and shape (see page 56).

In the cases now to be described, a record of the outline of each flap was preserved by making a drawing of it on the back of the respective patients' photographs, and they are shown here of the actual size and shape, following the last portrait of each patient.

Fig. 2 A.

The patient represented in Fig. 2 A and B was a woman thirty-eight years of age, named Phoolbai, caste Thakurani. She was admitted into the Indore Charitable Hospital in the middle of December, 1892, suffering from varicose ulcers of the leg. During her stay in hospital I had performed one or two rhinoplasties, and as she had lost her nose, or rather a good part of it, some fifteen years previously, she took a

very lively and personal interest in the result of these operations, so much so, that one morning I suggested that she also should submit to be operated on for the restoration of her nose. She laughed, and answered, "I am now an old woman, and it is really not worth my

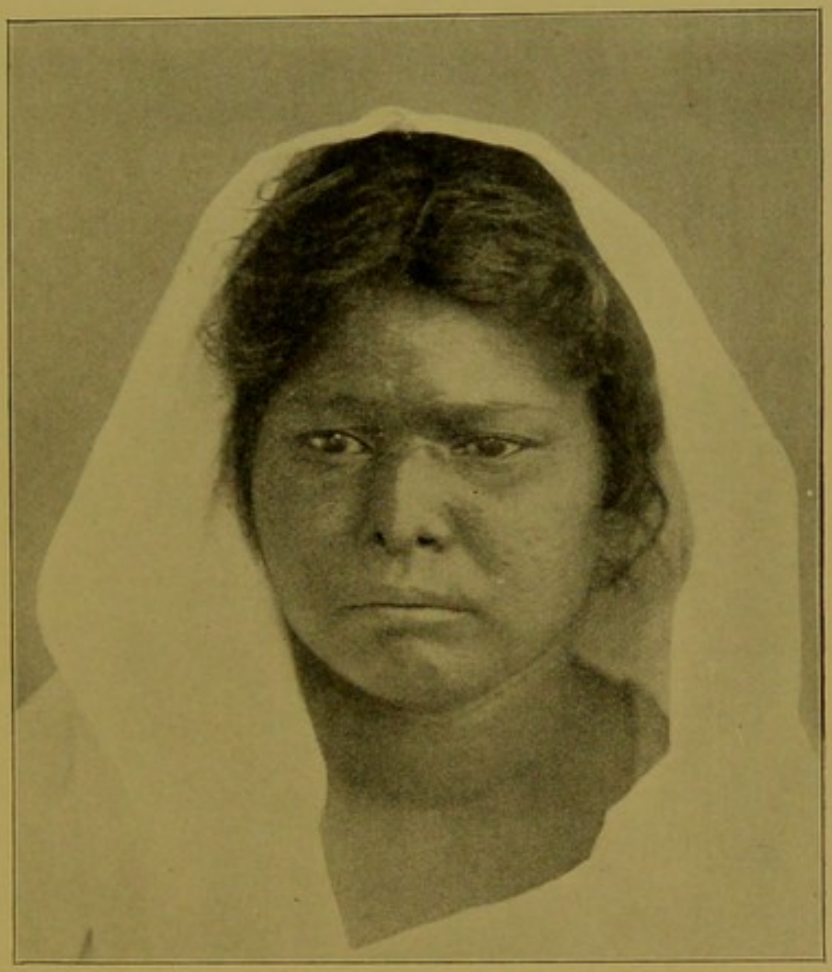

Fig. 2 b.

while to undergo the pain and trouble of an operation. Another thing is that my friends would hardly know me again if my nose was all right."

It may be here incidentally remarked that a woman approaching forty years of age is in the East considered to be almost old, as it is well known that Eastern women age more rapidly than their sisters in the West. I therefore did not try any further persuasion at the

time, preferring to give her an opportunity of thinking the matter over, and in a few days I heard from my assistant that she had expressed a wish to have the operation performed. I accordingly made the necessary preliminary arrangements, which will hereafter be more minutely described when I come to detail the steps of my operation. If one attentively examines Fig. 2 A he will perceive that the mutilation of the ala nasi on the right side was more extensive than on the left, and therefore it was necessary that, in mapping

Fig. 2 c.

out the forehead flap for this particular case, the curve of that portion of it which was to form the nostril on the left side should be sharper than on the right side, and a glance at Fig. 2 c will show that it was cut accordingly. The mutilation having been not very extensive, the forehead flap was cut proportionally narrower, whilst still retaining the general contour of the forehead flap of standard shape, depicted in Fig. 9, page 56.

The operation was performed on January 13, 1893, the pedicle was divided a fortnight afterwards, and

the woman left the hospital on February 15, cured of her varicose ulcers, rather proud of her new nose, and in a general way quite happy. Fig. 2 A is from a photograph taken before the operation, and Fig. 2 B from one taken afterwards. Fig. 2 C represents the outline of the flap taken from the forehead. On leaving the hospital in the possession of a somewhat sightly nose, she certainly looked younger than she did at the time of admission.

It will be seen that in this case I acted contrary to the opinions of Mr. Skey and Mr. Timothy Holmes, already quoted on pages 9 and 10. In the well-known treatises on surgery by these gentlemen, we are taught that even when a covering of normal integument is provided for the mutilated part, there still remains a doubt as to whether the patient's appearance has really been benefited. According to this view, rhinoplasty is an operation which the surgeon is hardly justified in recommending to a patient, and Mr. Holmes, in formulating his objections, expressly includes the case of "a nose which has been cut off"; but from the ample experience of it which I had acquired at this time, there seemed to me to be no reason whatever for the anticipation of other than a successful result. Any mischance, such as sloughing of the flap, or non-adhesion, or an attack of erysipelas, would, in fact, have been a serious calamity, for the mutilation was of such long standing that both the woman and her associates had ceased to regard it as an affliction. Fortunately, there were two circumstances in her favour: firstly, that there had not been any ulcerative disease of her nose; and, secondly, that although she spoke apologetically of herself as being old, yet she was far from manifesting any symptoms of senility. Either pre-existent local disease, or a debilitated constitution, would have decidedly contra-indicated the operation, for the question was not one of any urgency. The

advantages looked for were of a merely æsthetic nature, and the patient, during her residence in hospital, was able to appreciate the drawbacks incidental to the operation, such as bodily suffering, and the inevitable incision of the forehead. That she deliberately accepted these risks is a sufficient proof of the confidence she had acquired from personal observation of the case of a fellow patient.

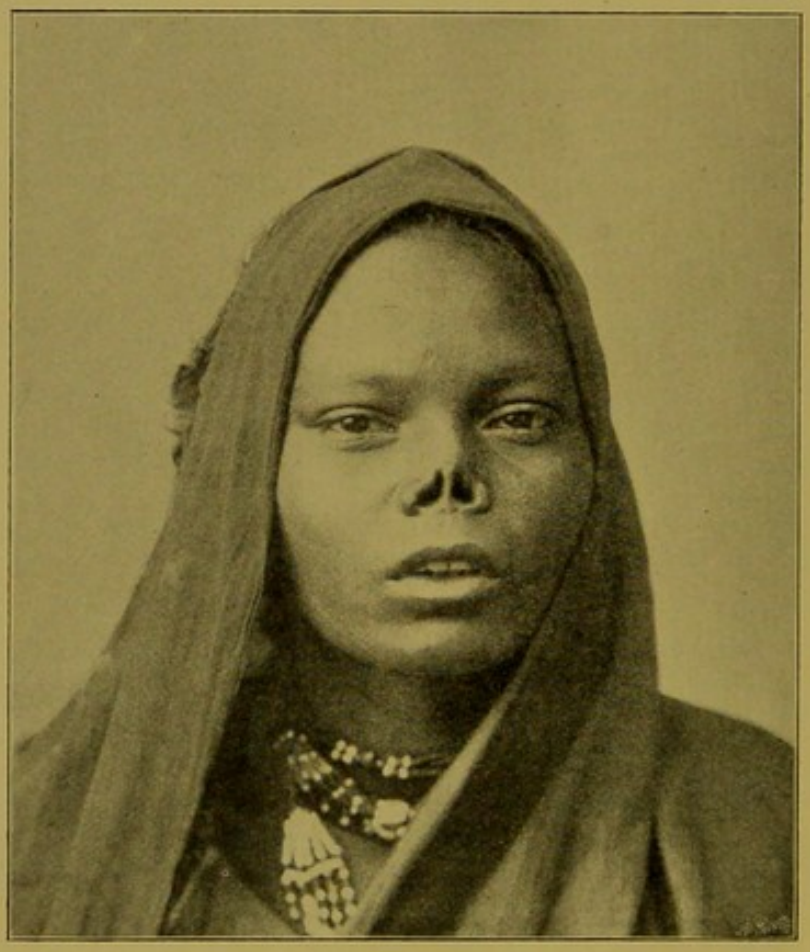

Fig. 3 A.

The woman represented in Fig. 3 A, B, C, and D, was admitted into the Indore Charitable Hospital in February or March, 1892, her nose having been cut off in December, 1891. She was extremely anxious that the operation should be performed at once, but I was

obliged to postpone it for some days, in order to have her photograph taken. She was, however, operated on within a week of her admission into hospital. She was a woman of most uncertain temper, and occupied a separate room in a row of huts in the hospital compound or enclosure built for the accommodation of females, and for the more respectable classes of patients who wished to be attended by their friends during

Fig. 3 b.

their stay in hospital. It chanced that her next neighbour in this row of huts was a woman in course of recovery from a successful rhinoplasty. In consequence of a serious quarrel between the two women, originating in some cause the nature of which I was

not able to ascertain, the one whose portrait is here shown absconded from the hospital at an early hour on the morning of the fourth day after the operation. I arrived at the hospital about 10 A.M., and my feelings may be imagined when my assistant informed me that the patient had disappeared. However, a reference to

FIG. 3 C.

the admission and discharge book showed that her home was in the Baghli District. The Baghli District, I may remark, is about thirty miles from Indore, and as she had got the start of me by eight or ten hours, I began to fear that it would be a difficult task to track her through the jungle. As chance would have it, the Thakur, or chieftain of Baghli, a friend of mine,

happened to be paying a visit to Indore at this time, and having made representation to him in my difficulties, he kindly placed at my disposal two of his sowars or horsemen, who were directed to follow the woman through the jungle, and persuade her to return to the hospital. They started on their mission, and I

Fig. 3 d.

must confess that I was by no means sanguine that it would turn out a successful one. However, on the fourth day after her very sudden departure, she was brought back again, and the sowars informed me that they had found her after much searching at that part of the Baghli District farthest from Indore. At first she positively refused to return to Indore, but was

ultimately persuaded to accompany the sowars who had been entrusted with the task of finding her. The dressings were still in good position on her nose, the horsehair sutures, which I always use in these cases, had not cut through the skin, and the right side of the nose had completely healed by primary union. In a few days there were some indications that she was contemplating flight a second time, so the pedicle was divided as soon as possible, namely, on the fourteenth day after the operation; and the photographs from

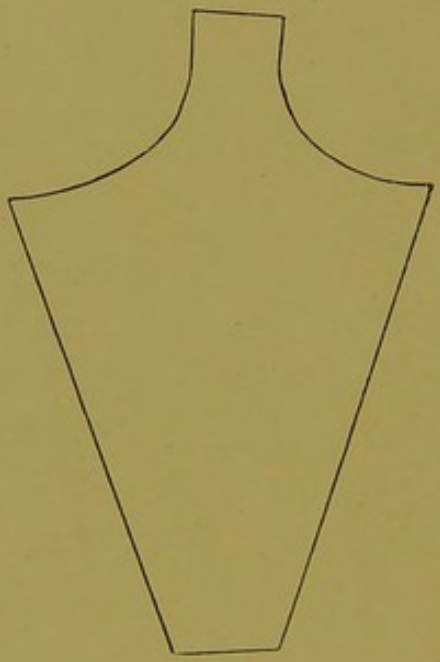

Fig. 3 E.

which Figs. 3 B, C, and D have been reproduced were for the same reason taken on the sixteenth day, although the swelling consequent on the division of the pedicle had not entirely disappeared. The case was therefore exceptional. Had I been in a position to wait for another week or ten days after the division of the pedicle, her picture would have been more favourable than here shown, and the line of junction on the left side of the nose would not have been so visible. Fig. 3 A was taken before the operation;

Figs. 3 B, C, and D show the woman's appearance after the operation; Fig. 3 E is the flap of skin from the forehead.

The whole of this journey of at least sixty miles, namely, from Indore to Baghli and back again, was made on foot, and the accomplishing such a feat in four days while suffering from the effects of a recent surgical operation, must be regarded as a conspicuous instance of strength of will, bodily vigour, and recuperative power on the part of the woman. Under the influence of hysteria, or maniacal excitement, females often make surprising muscular efforts; but a long and lonely journey through the jungle, under the circumstances stated, must have been a most trying experience. For the information of untravelled English readers I may mention, firstly, that in many parts of India the jungle is pathless, malarious, and infested with wild beasts; but between Indore and Baghli there is a fairly good country road; and, secondly, that the habitual diet of a person in this woman's class of life would be fresh vegetables of different kinds, ghee (clarified butter), and chupatties (little cakes of unleavened bread, baked over a fire or in hot ashes). It will be readily understood that such an escapade would have been wholly impossible for a person wearing the apparatus necessary for the Taliacotian operation, figured at page 12. The woman would to a certainty have torn away the arm flap, as in the case mentioned on page 15, and her last state would have been worse than her first. In reality, however, with the forehead flap no such untoward incident took place, and the ultimate result was very satisfactory, as the accompanying illustrations show. It will be seen from Fig. 3 C and Fig. 3 D, which give profile views of the patient, that the line of incision is less visible on the right side of the nose than on the left. This is, in fact, the general rule, the reason being

that in turning round the flap there is more tension on one side than on the other. If it is placed in the position shown in Fig. 10, on page 57, this tension will be on the left side. As will be hereinafter explained, it is on this account desirable that the incision outlining the pedicle of the flap should be much longer on one side than on the other.

Fig. 4 A.

The woman who appears in Fig. 4 A, B, C, and D was Choonibai, a Balaini of the village of Pahlia near Indore. She was admitted into hospital early in November, 1892, and was discharged on the 10th of December following. In this case the tip of the nose and the columna only were cut away, leaving the

greater portion of the ala nasi on both sides uninjured. Many surgeons in dealing with such a condition of the parts would have been inclined to remedy the mutilation by a flap taken from the upper lip. I, however, preferred to take the flap from the forehead, a step which seemed to be justified by the results. The flap

Fig. 4 B.

which I raised from the forehead in this case is shown in Fig. 4 E; it retained the shape of the ideal flap represented in Fig. 9 on page 56, but was modified by being much diminished in breadth. The alæ nasi on both sides were not disturbed, and the narrow frontal flap was slipped in between the two incisions drawn from the inner portions of the alæ nasi to that

point on the bridge of the nose where a pair of spectacles would rest, as will be hereafter described. The flap in this case much resembled the one used for Phoolbai (see Fig. 2 c on page 22). The lateral margins of the flap when placed over the nasal bones were most accurately adjusted to the margins of the

Fig. 4 c.

incisions on either side of the nose, and long before the woman left the hospital it was almost impossible to discover the line of junction.

The scar on the forehead, however, was very marked; but when the healing process was complete, she would no doubt be able to disguise the unsightly appearance by means of cosmetics applied in the form

of the tīkā, as will be presently described. Perhaps in this case I erred in cutting the columna a little too broad, the effect of which is to make the septum nasi thicker than it need be, and thereby to render the woman's features heavy-looking.

When only the columna and tip of the nose are

Fig. 4 D.

lost, the replacement of them by means of a narrow flap taken from the upper lip is, or at least seems to be, a much simpler and easier proceeding than the taking of a flap from the forehead, and the latter operation would no doubt be unjustifiable in trivial injuries of the nose; but in all the cases of wilful mutilation that have come under my notice, it seemed to me to hold out

the best prospect of a successful result. Some very able surgeons combine the two operations by taking a flap for the exterior of the nose from the forehead, and a second one from the upper lip to form the columna, but this modification does not, in my opinion, present any advantages over the ordinary method of making the columna with a narrow prolongation of the forehead flap. Sir John Erichsen, in his "Science and Art of Surgery," remarks that when the columna is lost, the

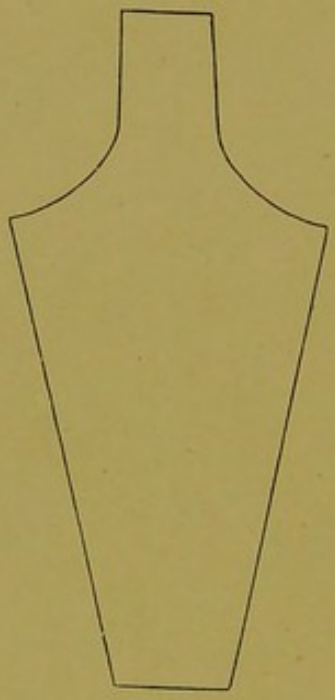

Fig. 4 E.

upper lip being no longer properly supported becomes pendulous, projecting, and thickened. When the missing part is limited to the columna and a portion of the septum, the alæ being intact, he recommends it to be replaced from the upper lip, which, by being reduced in size, is rendered more shapely. The operation consists in cutting through the whole lip from above downwards on each side of the mesial line, so as to leave a tongue about one-third of an inch in width. This is

then turned up; and its free end being well pared, and the under surface of the tip of the nose properly freshened, it is fixed by means of a fine hairlip pin and twisted suture, which should be left in for about four days. Union takes place in a few days, but until this is firm the new columna must be properly supported with narrow strips of plaster fixed to the cheek on each side. According to him, no twisting of this small flap is required, as the mucous surface speedily becomes cutaneous, and *vice versa*. The division in the upper lip must be treated in the same way as an ordinary harelip, and unites without difficulty, lessening greatly the deformity in this part. Dr. Joseph Ransohoff, professor of descriptive anatomy and clinical surgery in the Medical College of Ohio, a contributor to the "Reference Handbook of the Medical Sciences," edited by Dr. Albert H. Buck of New York (Edinburgh: 1889, volume v. page 716), says that the tip of the nose may be repaired with a flap from the cheek. The pedicle of this flap extends quite to the root of the nose; its broad end may be divided by two incisions for forming parts of the nostrils and septum. In larger defects of the alæ it is advisable to procure a flap, quadrilateral in shape, from the cheek or from the upper lip. With respect to the restoration of the columna, Dr. Ransohoff expresses himself to the same effect as Sir John Erichsen. He says: "The nasal column, when it alone is defective, can be admirably repaired from the central portion of the upper lip, which must be included between parallel perpendicular incisions. When the flap thus formed is brought in contact with the nasal septum, its mucous surface is of course exposed, and is eventually converted into skin." On the other hand, Dr. Blandin and Dr. Sedillot, two French surgeons, had an unfortunate experience of this operation (quoted in "Dictionnaire Encyclopédique des Sciences Médicales," Paris, 1886, troisième série.

tome iv. page 367)—"la muqueuse conserva sa coloration rouge et produisait l'effet le plus disgracieux." Dupuytren and others took a flap of skin from the upper lip with the pedicle at the upper extremity and twisted it, applying the raw surface to the remains of the columna. Another plan is to have the pedicle at

Fig. 5 A.

the lower extremity of the flap, and slide the latter upwards to take the place of the columna.

The following case was an instance of a man cutting off his young wife's nose in an ordinary domestic quarrel, altogether apart from any question of conjugal infidelity. The victim of this barbarity is represented in Fig. 5 A, B, C, and D. Her name was Gungabai.

She was a dhobin or washerwoman by caste, and her history was an extremely pathetic one. She was a mere girl, thirteen years of age, when admitted into the Indore Charitable Hospital, in the end of September, 1892. She was a native of the city of Indore, and some months previously had gone to live with her

Fig. 5 b.

husband, who had taken up his temporary residence in the sacred city of Ujjain, distant about forty miles from Indore. When she left home for Ujjain, in order to join her husband, it would appear that her father also moved on to Ujjain, so as to be near his daughter. Being of such tender years, she seems to have been regarded by her husband more in the light of a servant

than of a wife, and her principal duties appeared to have consisted in cooking his food and in performing various household duties. The brass plates and dishes which he used at meal times required to be kept bright and polished, and it would seem that the day before her admission into hospital she had failed to please

Fig. 5 c.

him in this respect. He thereupon loaded her with reproaches, flew into a rage, and wound up by cutting off her nose. She at once rushed to her father for protection, and on the following day he brought her down by railway to Indore to the hospital, where I happened to be at the time of their arrival. The distress and grief and shame of this poor girl were painful to

witness; and the father's indignation, as he related the story of his young daughter's terrible punishment, made a great impression on me and on all those who heard his tale. I endeavoured to console the girl, and promised to give her a good nose if she would only have patience and wait for two or three weeks, until the cut

FIG. 5 D.

surfaces had healed, and all inflammation of the nose and cheeks had subsided. She promised to do so, and for some days seemed to have become resigned to her sad lot; but mental and physical pain overcame her good resolutions, and she escaped from the hospital and made her way to the river which runs outside the city of Indore, intending to drown herself. However,

her sudden departure from the hospital had not escaped notice: a search was made for her, and just as she had reached the banks of the river she was overtaken, and brought back again to the hospital. On her return she seemed much ashamed of herself for contemplating suicide, but pleaded her suffering and degradation as an excuse. This contrition, however, was of short duration, for two days afterwards she tried to throw

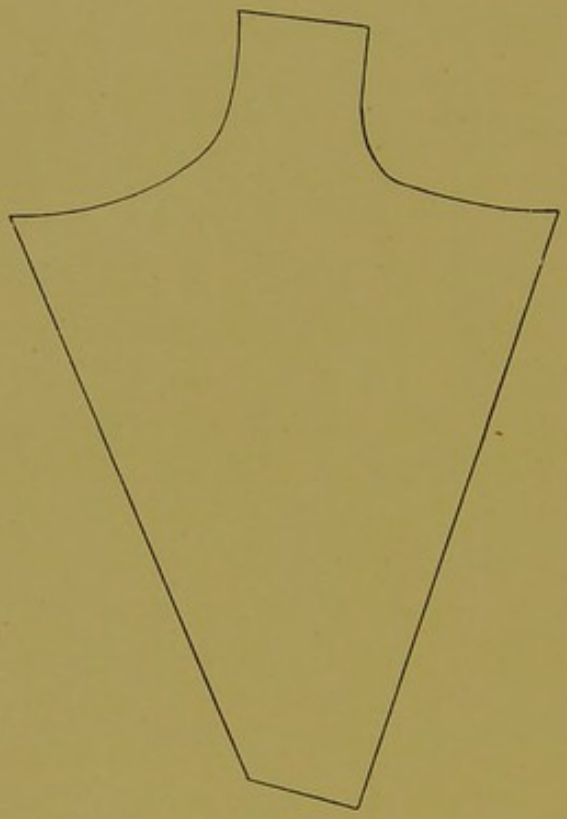

Fig. 5 E.

herself into the well in the hospital compound or enclosure, but was luckily prevented from doing so. At last she became somewhat more resigned, and as her wounds healed, her general health improved. I performed a rhinoplastic operation at the end of October, and she left the hospital in the middle of November in a tolerably happy frame of mind. The mutilation being very extensive, I was obliged to take

an unusually large flap from the forehead (see Fig. 5 E) and the scar left behind was therefore very marked. This disfigurement would probably become less obvious as she grew older, and doubtless she would conceal it by the application of cosmetics and powder. The father of the girl vowed vengeance against his heartless son-in-law, and expressed his determination to prosecute him in the Courts of Justice at Ujjain; but as the three were subjects of Maharajah Holkar, and had gone to reside temporarily in Ujjain City, which is in the territories of Maharajah Scindia, I am inclined to think that the guilty individual escaped the punishment which he so richly deserved. Fig. 5 A was taken before the operation, and Fig. 5 B, C and D, afterwards.

Dr. Norman Chevers, in his "Manual of Medical Jurisprudence for India," mentions at page 488 a case somewhat similar to the foregoing. The circumstances were that in 1856 a mehter living in Chandney Chowk, Calcutta, being enraged with his wife because she refused to bring him water to drink, took a knife and cut off her nose. A case in which a man in Bhooj mutilated the nose and upper lip of his sister-in-law is recorded in the Bombay Presidency Reports, vol. ii. page 199. Dr. Chevers also quotes cases in which women's noses were cut off, not in the heat of passion or jealousy, but quite deliberately and with concomitants to which a quasi-judicial character was given. For instance, he says that Dr. Gibson mentions in his "Account of the Province of Guzerat," published in the first number of the Transactions of the Medical and Physical Society of Bombay, that among the Doonjas the crime of sorcery is very common, and that many women may be seen throughout the country whose noses have been cut off as the punishment of their witchcraft. The writer of an article on the women of Hindustan (*Asiatic Journal*, N.S., vol. xxix. page 298) says that he had twice or thrice seen

unchastity punished in this way immediately upon conviction of the crime. It was done with much ceremony by the village barber, who, having first shaved the woman's head, at a signal from the chief of the Punchayet (council of five Brahmins) "snips off her nose with a small pair of shears." He adds that

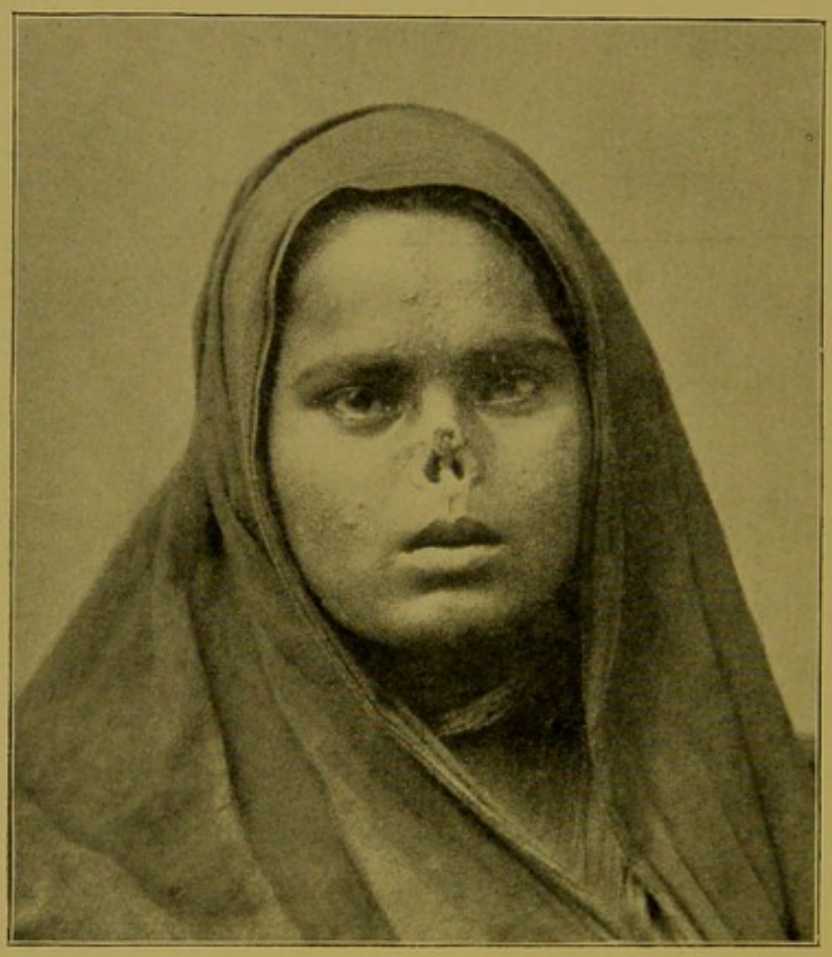

FIG. 6 A.

the Punjabees used to obliterate all traces of beauty in the person of the delinquent by the application of an escharotic. Macnaghten's Reports contain a very singular case, where a woman had entered into a formal engagement to allow her husband to cut off her nose, hands, and ears in the event of her behaving improperly. She having forfeited her pledge, her husband convened

a Punchayet, forced a confession of guilt from the woman and her paramour, and having received their authority to enforce its conditions, deliberately took up a knife and cut off her nose. A brief reference to the mutilation of prisoners of war will be made a few pages hence.

Fig. 6 B.

The woman whose portrait appears at Fig. 6 A, B, C, and D was Gendibai, a Chumarin of Mehidpur, and was admitted into the Indore Hospital in September, 1892, her nose having been cut off about fifteen days before. Rhinoplasty was performed on October 14. Fig. 6 A was taken before the operation. Fig. 6, B, C and D were taken on November

20, more than five weeks after the operation. Fig. 6 E is the flap of skin from the forehead. The mutilation in this case was very extensive, the inferior portion of the nasal bones being almost visible. I therefore had some difficulty in the formation of the new nostrils, and the patient was obliged to wear

FIG. 6 C.

indiarubber tubing in them for a time, as the tissues left on the nasal bones were hardly sufficient to provide that lining for the nostrils which is the essential feature of my method of restoring the nose. In addition to her bodily sufferings, the woman was a prey to melancholy, weeping continually, so much so that her health became impaired. It may be here remarked

that in women with high cheek-bones and broad faces the cast of the features after cutting off the nose sometimes comes to resemble that of the apes. Fig. 6 A presents an instance of this kind. The expression of the eyes of the patients before and after operation is worthy of notice. In the former case the eyes are

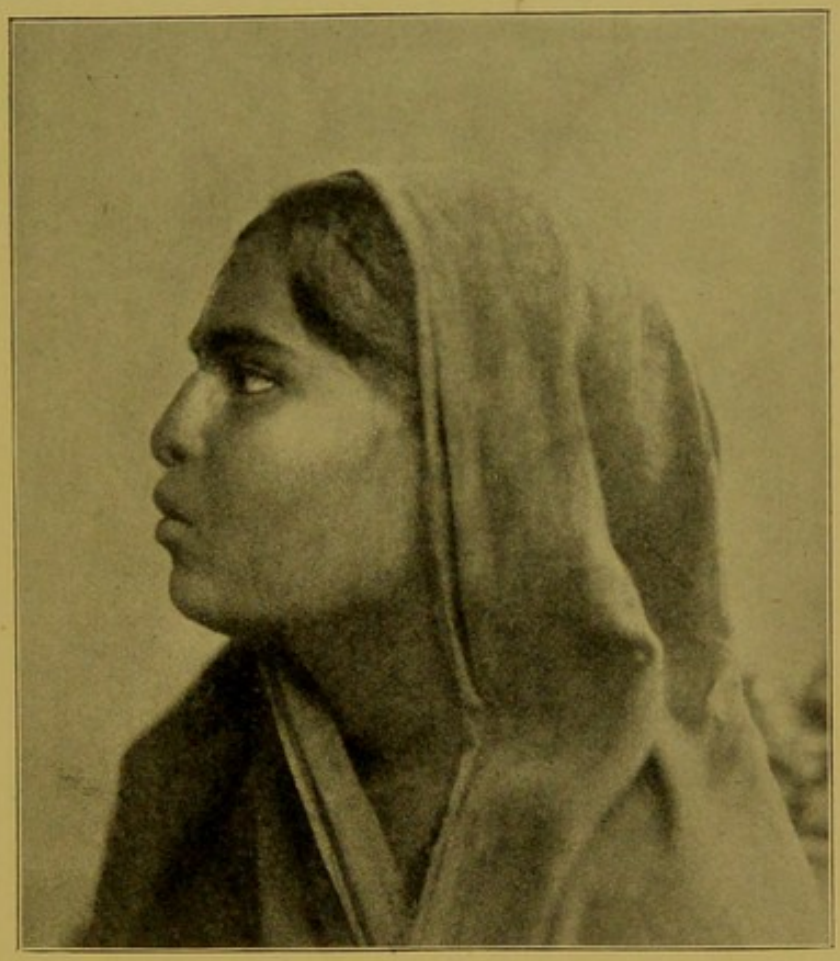

FIG. 6 D.

staring and haggard, whilst in the latter they have a calm and peaceful expression.

An even worse case of mutilation than the foregoing came under my care six or seven months previously, namely in the beginning of February, 1892, when a young woman was brought to the Indore Hospital, her nose having been cut off on the preceding

day. This was one of the most aggravated cases of its kind that I have ever had to deal with; for not only were the cartilages and both alæ nasi cut away, but, in addition, the right cheek and upper lip had been deeply gashed in a most barbarous fashion. The divided lip and cheek hung down on her chin, so that the cavity of the mouth and the molar teeth in the right upper jaw were exposed. She had lost much

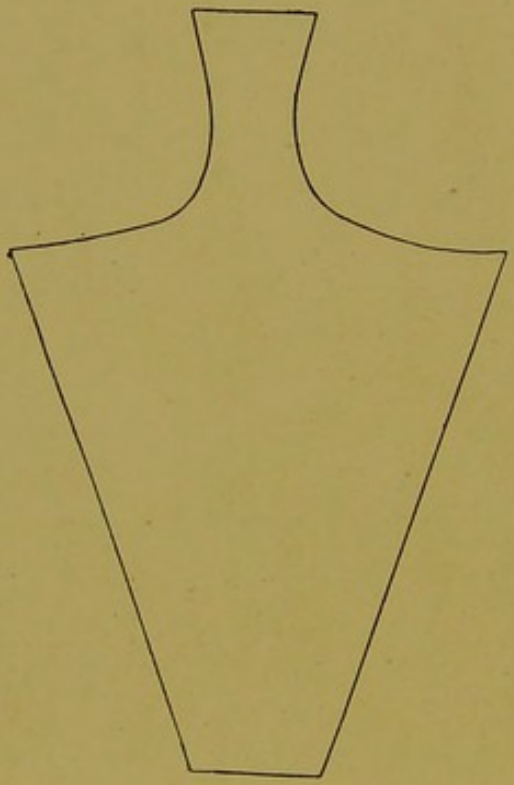

Fig. 6 E.

blood, and was blanched and very weak. The mutilation had been effected by means of a sharp razor. The wound in the cheek and lip was brought together by horsehair sutures, and healed by primary union; but it unfortunately left a conspicuous scar. After the lapse of a fortnight, I performed a rhinoplastic operation, the result of which was very successful.

I have already promised (page 43) to make a brief

reference to the practice of cutting off the noses of prisoners captured in the various wars which were so frequent in India before the period of the complete occupation of the country by the British. Eastern warfare contains many elements of gross cruelty, such as hardly existed in Europe even in mediæval times, and the merciless severity of Eastern punishments has been proverbial ever since the Greek historians of the fourth and fifth centuries before Christ chronicled the wars in which their valiant countrymen, though far inferior in numbers, nevertheless routed the great armies led by the Persian kings, Xerxes and Darius. Some idea of the horrible extent to which the amputation of noses and lips was formerly carried in India may be formed from the narrative of the siege and capture of the town of Kirtipoor, or Khistipoor, in Nepal, mentioned by Dr. Norman Chevers in his "Medical Jurisprudence for India" (p. 487), and described at greater length by Father Giuseppe in his "Account of Nepaul" (*Asiatic Researches*, volume ii. Calcutta, 1790, pp. 318, 319). The events in question took place in the year 1769 or 1770. The town was besieged by the Ghoorka army, and betrayed by one of its nobles. The inhabitants might still have stood on their defence; but on the promise of amnesty they surrendered themselves prisoners. Two days afterwards, Pritwi Narayan, the Ghoorka king, to whom the siege had given much trouble, out of resentment of the resistance made by the inhabitants, ordered the principal persons of the town to be put to death, and the lips and noses of every one, even the infants who were not found in their mothers' arms, to be cut off; directing, at the same time, that the lips and noses should be preserved, so that he might ascertain the number of the victims. To perpetuate this exploit he caused the name of the place to be changed to Naskatapoor. The mutilation was carried out with the

utmost cruelty, none escaping but those who could play on wind instruments. Many of the sufferers in despair put an end to their lives. Father Giuseppe says that "it was most shocking to see so many living people with their teeth and noses resembling the skulls of the dead." After the lapse of twenty-three years,

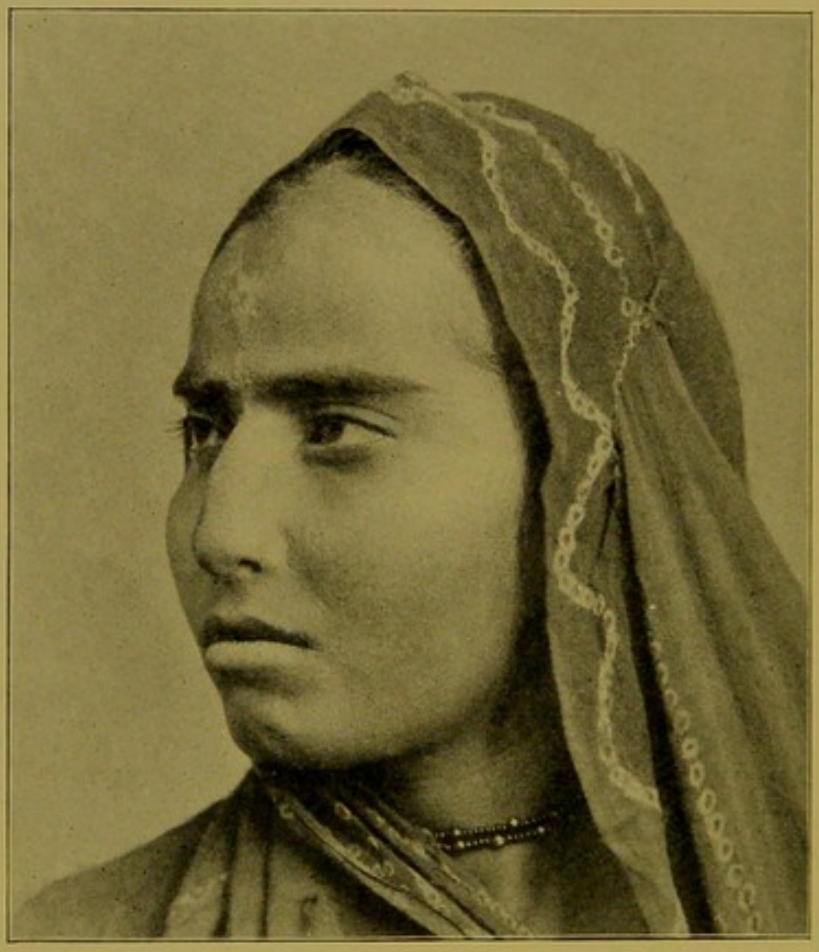

Fig. 7 A.

Colonel Kirkpatrick was reminded of this act of barbarity by observing that a great proportion of the people sent to transport his baggage across the hills were deprived of their noses. Dr. Chevers mentions (*op. cit.*) that Hyder Ali and Tippoo Sahib were in the habit of cutting off the noses and ears of their English prisoners who were caught in attempting to escape,

and that Tippoo before Mangalore cut off the noses and ears of the whole of a Sepoy brigade who attempted to prevent an execution.

The woman shown in Fig. 7 A was Rupabai Darjeen, aged twenty-five years, whose nose was cut off about March, 1892. She was admitted into the Indore

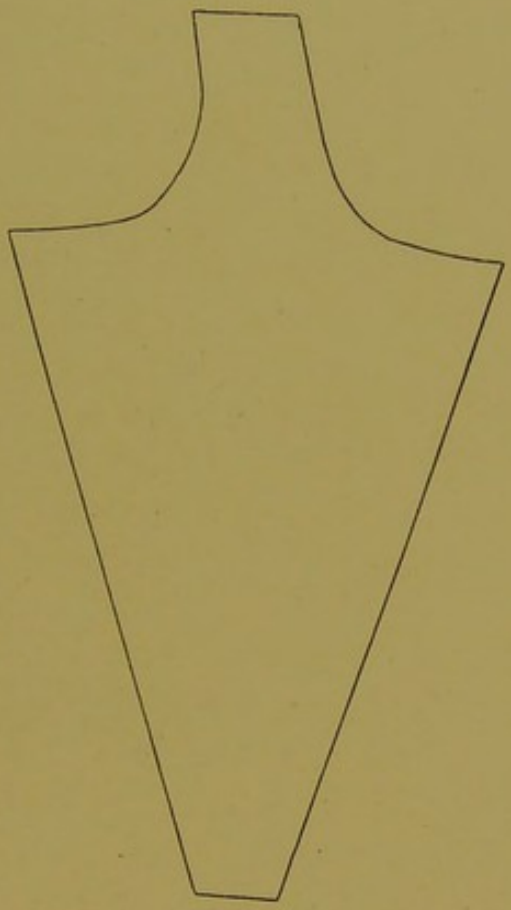

FIG. 7 B.

Charitable Hospital on April 14, 1893. All the cartilages of the nose had been cut off, and only a very small portion of the ala was left on either side, but the skin covering the nasal bones had not been interfered with. Rhinoplasty was performed on April 18. Fig. 7 B shows the exact size and shape of the flap taken from the forehead; the pedicle was divided on May 2, and the patient was discharged from hospital

on May 17. It will be seen that Fig. 7 A was photographed after the operation. Unfortunately I have not got a photograph of this patient showing the mutilation, a circumstance which is much to be regretted, as the result in her case was one of the best I have ever achieved. Her high and expansive fore-

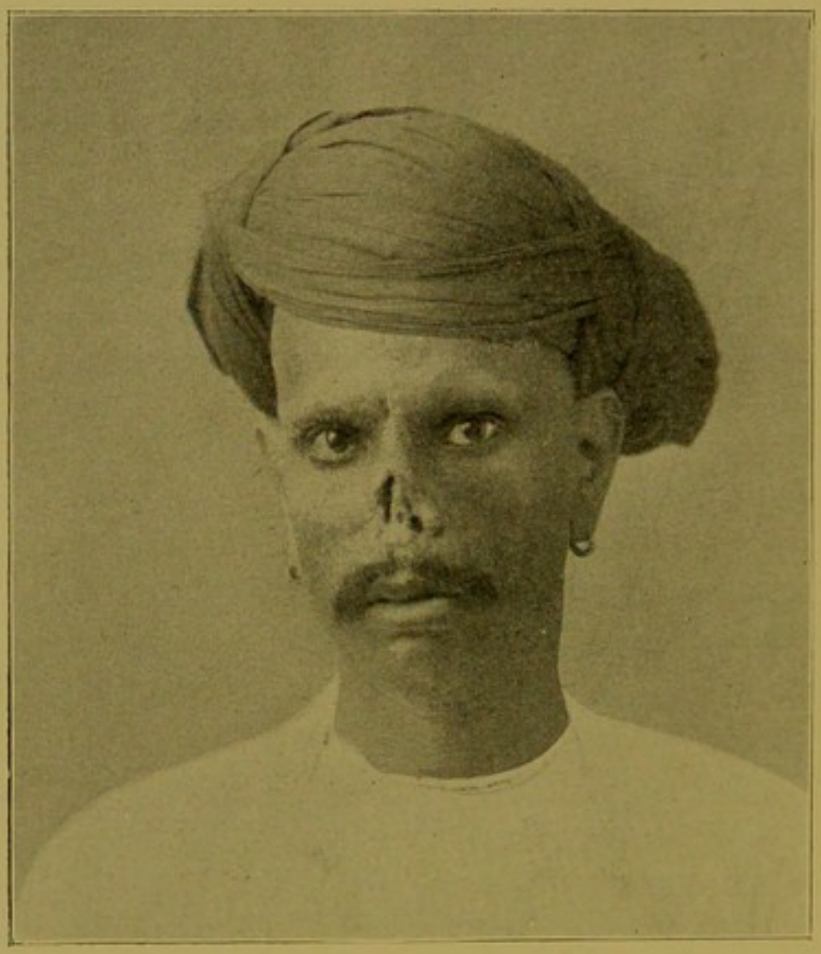

FIG. 8 A.

head afforded ample material for the formation of a long nose suitable to the contour of her features, and the scar marking the position from which the flap was taken was so slight that it could be easily concealed with the aid of toilet artifices.

Heera Lall, the man whose portrait is shown in Fig. 8 A, B, was admitted into the Indore Charitable

Hospital on February 10, 1892, his nose having been cut off a day or two previously. He was suffering great pain and his mental distress was intense. Both of his cheeks were much swollen, and the nasal secretion flowed freely over his upper lip, causing him much annoyance. The story he told me was that he had

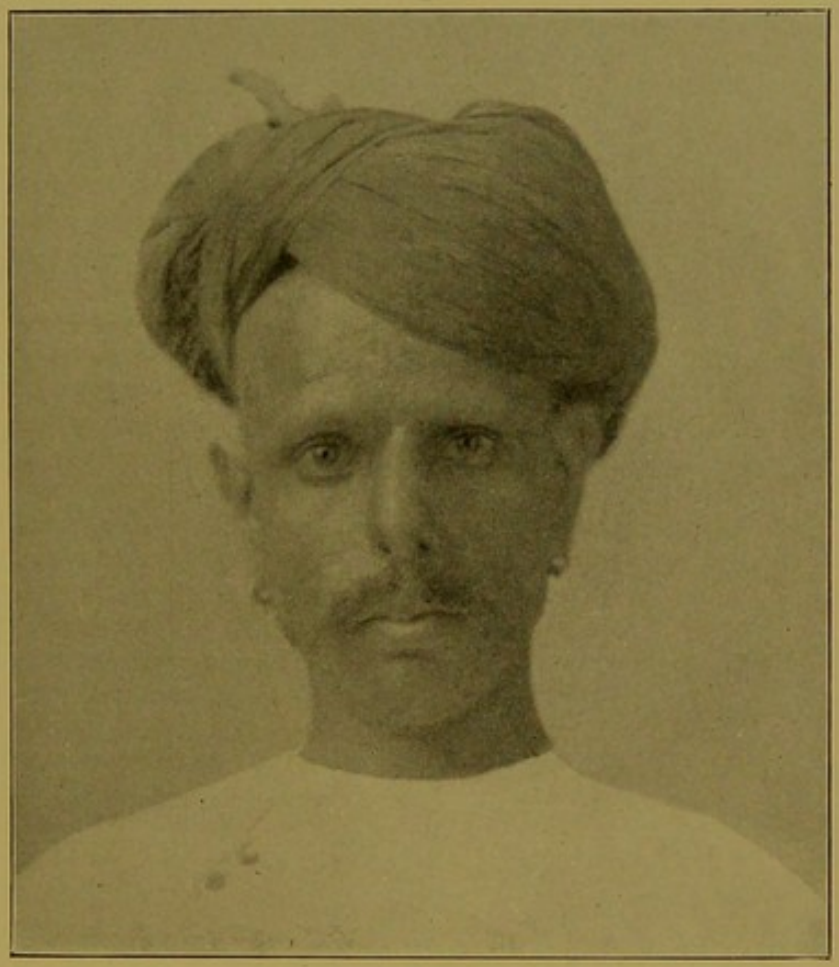

Fig. 8 b.

owed money to a bunniah (*i.e.* a money-lender), and had failed to pay his debts. The bunniah's patience would seem to have become exhausted, for he engaged the services of two stalwart natives, who seized Heera Lall as he passed along the road, dragged him into a field, bound his hands and feet, and made a clean sweep of his nose with a knife. I must confess that

this explanation of his misfortune appeared to me to be open to the greatest possible doubt, and I considered at the time that the motive which prompted the mutilation had its origin in some amorous escapade into which it was not my business to pry. Fig. 8 A is from a photograph taken on February 15. Rhinoplasty

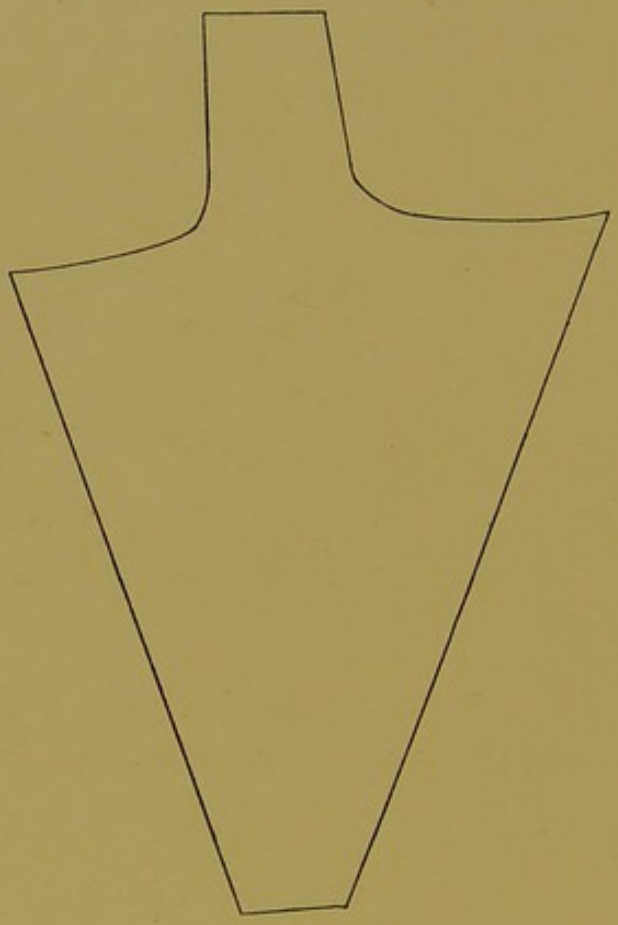

FIG. 8 C.

was performed on March 7 ; the pedicle was divided on March 21, and the man left the hospital early in April, very pleased with the improvement in his appearance. The destruction of the skin over the nasal bones was so extensive that I found it perfectly impossible to line the nostrils in their entirety with skin, and he was therefore obliged to wear indiarubber

tubing in the nostrils for several weeks after his discharge from hospital. Fig. 8 B is from a photograph taken after the operation. Fig. 8 C is the outline of the flap of skin from the forehead.

It will be seen that the above seven patients ultimately presented a very satisfactory appearance with shapely, prominent noses and well-formed, open nostrils. The striking contrast in their condition before rhinoplasty and afterwards fully attests the value of the operation. It would not have been difficult for me to have added considerably to the foregoing illustrations, but I preferred to select from a large number of photographs in my possession seven representative types, some of comparatively slight, and others of very extensive mutilation. I think that the specimens here shown will be found to comprise most of the degrees of mutilation which surgeons practising in India are likely to meet with.

It may be mentioned here that my paper, published in the *Lancet* of February 21, 1891, was illustrated by eight wood engravings copied from photographs showing the appearances presented by four patients before and after rhinoplasty. Three of them were women; the fourth was a man whose nose had been cut off by dacoits; the marks visible on the man's forehead are not the results of the operation, but are caste marks (he was a Mahratta Brahmin).

It has been mentioned on a preceding page that the conditions under which the surgeon in India performs rhinoplasty differ somewhat from those under which he does the same operation in Europe. In Europe, in the majority of cases, rhinoplasty is performed in order to repair the ravages and disfigurement caused by lupus or tertiary syphilis, and it is but seldom that plastic surgery is called upon to make good the damage done to a nose by accident or mutilation. In India, on the other hand, in the vast

majority of cases, rhinoplasty is performed to hide the ghastly disfigurement caused by mutilation, and our patients are almost invariably young, healthy, and robust. During my service in India, I think I must have performed between forty and fifty rhinoplastic operations up to the beginning of 1891, and in the course of the period from that time till my final departure from India in 1894, ten or twelve operations would be added to the previous total. In every single case they were undertaken to repair the damage inflicted by mutilation. It will be conceded by most surgeons who have had considerable experience in rhinoplasty, that the Indian method of operating possesses many advantages over both the Taliacotian and the French procedures, and I have already, on page 14, quoted an experienced Indian operator (Tribhovandas Motichand Shah) as advocating this view. After I had acquired some proficiency in the Indian method as described and figured in English surgical text-books, a careful study of the operation convinced me that it was capable of much improvement, and the result of my efforts to surmount the various difficulties that presented themselves has been the formation of noses, types of which are shown in the preceding illustrations. I think it will be generally admitted that these mutilated victims have regained a fairly satisfactory personal appearance, and that the new noses, seen both in front view and in side view, are free from the defects of flatness and atrophy complained of by Mr. Holmes and others, as already mentioned. The operation which I have performed of late years as the result of considerable experience of rhinoplasty is, however, only applicable in its fullest extent to those cases of loss of nose in which the skin and tissues which clothe the nasal bones have been left undamaged. All surgeons who have had much experience in making new noses are, I think, agreed that the

principal difficulties and drawbacks of the operation centre in the formation of the columna, and in obviating the continued tendency to contraction in the anterior nares of the newly-fashioned nose, a tendency which is maintained for several months after operation. The method of forming new noses which I pursued for some years at the Indore Charitable Hospital was worked out independently by my assistant, Mr. Gunput Singh, and myself; but we do not claim for it any title to originality, for German surgeons have to some extent adopted the same method of obviating the contraction of the anterior nares. As the outcome of much practice, both on the living subject and on the dead body, I have come to the conclusion that the *shape* of the ideal forehead flap is that which is shown in Fig. 9. Its *size*, as already mentioned, will vary according to the individual case. The pedicle or attachment of this flap differs somewhat from the outline given in the *Lancet* of February 21, 1891. I believe that the present form is preferable, and is the shape of flap which the surgeon should raise from the forehead when he has to deal with a case of lost nose, in which the entire cartilage, both alæ and the columna, have disappeared. The size or superficial area of the flap, as distinguished from its shape or outline, will, of course, depend a good deal upon the make or cast of face of the patient with whom we have to deal. If the patient's nose was originally a long one, then the forehead flap must be cut proportionally longer. That the annexed outline (*i.e.* Fig. 9) indicates the shape of flap which should be aimed at, I have proved again and again to demonstration by mapping the outline of several noses cut off from subjects in the dissecting room. Should portions of the patient's alæ nasi and columna be left intact, then of course the shape of the forehead flap must be modified to suit the requirements of the case. The

pedicle of the forehead flap should occupy the internal angle of the orbit, and care should be taken that the angular artery which supplies the pedicle be not wounded. The forehead flap should be marked out obliquely, as shown in Fig. 10, and not perpendicularly to a line connecting the eyebrows. In Eastern women, who frequently have low foreheads, I have often been obliged to encroach on the scalp to provide for the

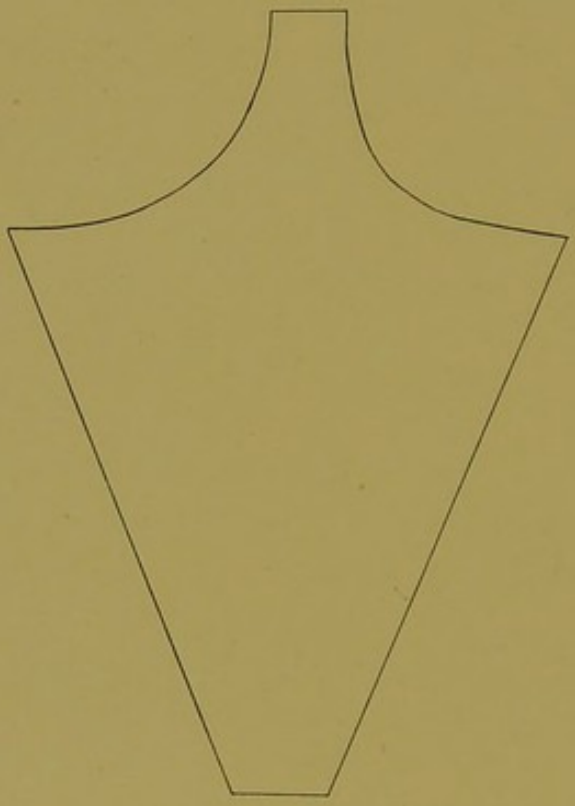

Fig. 9.

columna; and although, under such circumstances, hair grows on the newly-formed columna, still I think that this is preferable to deforming the mouth by taking the columna from the upper lip, as the hair can be kept clipped with scissors. The flap which I have recommended differs considerably from that which we see generally figured in English surgical text-books. In support of this assertion, I may refer to the well-

known "Manual of Surgery" by Professor William Rose and Mr. Albert Carless, both of King's College Hospital, London. The second edition of this work was published in September, 1899; the rhinoplastic forehead flap, shown at page 706 (quoted from Tillmanns), has a continuously rounded or oval extremity, and the columna is directed to be made from the upper lip.

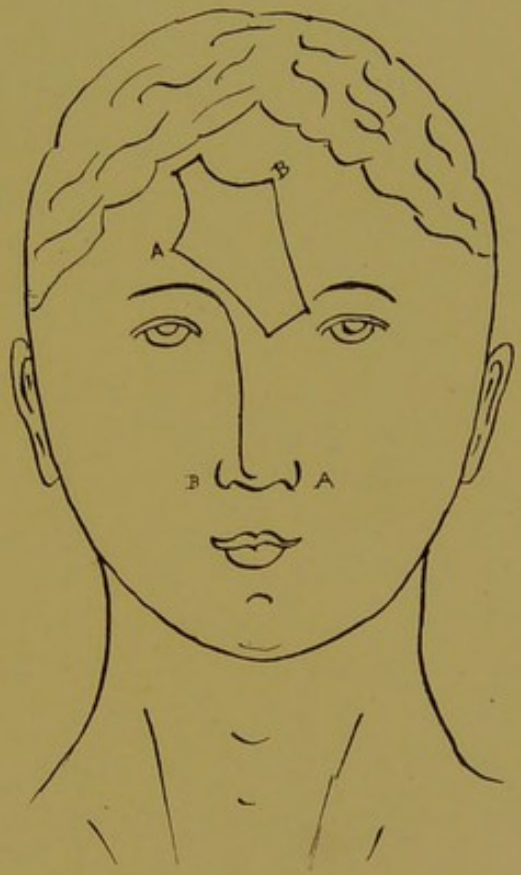


FIG. 10.

My method of obviating the contractile tendency of the anterior nares of the newly-formed nose is as follows. I generally allow at least a fortnight or three weeks to elapse after the mutilation before attempting to restore a new nose. A day or two before the operation I prepare a pattern of the forehead flap by cutting it out first in a piece of a leaf of the plantain tree (better known in Europe as the banana). This

leaf is very suitable for the purpose, on account of its flexibility and suppleness and the easy manner in which it can be cut with scissors. A piece of stout brown paper, cut to the exact size of this pattern, is rendered adhesive on one side by smearing it with litharge plaster, and at the proper stage of the operation is stuck firmly on the forehead in a slanting direction, as shown in Fig. 10. It is immaterial whether the slant of the flap is directed to the right or to the left side. A rhinoplastic operation requires for its proper performance at least an hour and a half, for which reason it was my custom to reserve these operations for a "slack day." The patient having been fully anæsthetized (I always used chloroform with an inhaler), the cavities on both sides of the septum nasi are plugged with pledgets of cotton-wool, to which strings or sutures are attached in order to guard against their falling through the posterior nares. We will suppose that we have to deal with a case in which both alæ nasi, the entire cartilage, and the columna have been cut away. The operation is begun by carrying two converging incisions from two points slightly external to the roots of the alæ nasi to two points about three-quarters of an inch apart on the bridge of the nose, at the situation where a pair of spectacles would rest. These two points on the bridge of the nose are now joined by a horizontal incision. This horizontal incision is bisected, and a perpendicular incision is drawn downwards from the point of bisection nearly as far as where the nasal bones join on to the cartilage of the nose. In other words, this perpendicular incision follows the course of the junction of the nasal bones, but is not carried down as far as their inferior borders. The skin and tissues are now dissected cautiously from off the nasal bones from above downwards in two flaps, A B C D and E F G H, as shown in Fig. 11.

The two inferior attachments or pedicles of the flaps—namely C D and G H—are not interfered with; they maintain the continuity of the flaps with the structures and tissues which clothe the inferior borders of the nasal bones, where they join on to the cartilage of the nose. If these two flaps are reflected downwards, so that their raw surfaces look forwards, and their cuticular surfaces look backwards, it will be found that they overlap in the centre. There is, therefore, a redundancy of flap to be dealt with, a redundancy which can be utilized a little later on when the flap has been raised from the forehead. The nasal flaps having been prepared, the next stage is to raise the

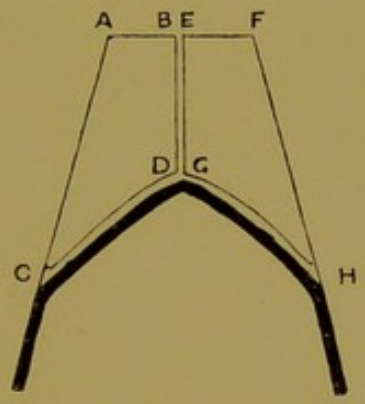


FIG. 11.

forehead flap. The brown paper pattern, already described, being in readiness, is made to adhere to the skin of the forehead by means of its coating of litharge plaster. The point of a sharp knife (preferably a Beer's cataract knife) is now run round the border of the paper, marking out the flap by a very slight incision so as to avoid hæmorrhage. The paper is now pulled off, the incision is deepened, and the flap is quickly raised from the forehead. This flap should embrace all the tissues down to the periosteum, and should be subjected to as little handling as possible. Of necessity the pedicle has to be twisted in bringing the flap down on the nose, and in order to facilitate this twisting, and

avoid tension, it will be found advisable in making the pedicle to carry the incision towards the orbit further on one side than on the other. The sides of the gap now left in the forehead are approximated as quickly as possible by means of horsehair sutures, and it is surprising how small a raw surface is left behind on the forehead if the approximation of the sides of the gap be judiciously and expeditiously carried out. In proof of this, reference may be made to the portraits of Phoolbai (Fig. 2 B) and Rupabai (Fig. 7 A). The very common practice among Indian women of wearing an ornament or "baindī" on the forehead, or putting on a "tilak" or "tīkā," materially tends to conceal the scar left by the operation.* The same effect is obtained in the case of a man by the caste-mark which he puts on every morning after his bath.

In bringing together the edges of the raw surface on the forehead, I generally use at least five sutures of two hairs each—one across the base of the gap which supplied the columna, one across each of the two angles at the upper part, a horizontal one across the middle of the body of the flap, and one halfway between that and the pedicle. From this it will be seen that the eyebrows are eventually brought nearer together. Attention is now directed to preparing a bed for the reception of the columna by cutting out a square piece of tissue at the site of the original columna, without encroaching on the upper lip. The two flaps, A B C D and E F G H, which have been already raised from off the nasal bones, are now reflected downwards, and, as they overlap in the centre, two triangular-shaped pieces are cut away, placed in the middle of the gap left in the forehead, and sutured there in order to expedite the process of cicatrization in the frontal

* "Baindī" is an ornamental circlet made with a coloured earth or unguent on the forehead and between the eyebrows. "Tilak" or "tīkā" is a mark or marks made with coloured earth or unguents upon the forehead and between the eyebrows, either as an ornament or as sectarial distinction.

scar.* The forehead flap is now brought down over the nasal bones, and rests inferiorly on the two reflected flaps, A B C D and E F G H, taken from off the nasal bones. The raw surface of the frontal flap, inferiorly, lies on the raw surfaces of the two reflected nasal flaps, and the nostrils of the newly-formed nose are therefore lined inside with the skin or cuticular sides of the reflected nasal flaps. The free inferior margins of the forehead flap and the nasal flaps are now brought together by horsehair sutures. The columnar portion of the forehead flap is then fixed by sutures in the bed prepared for it, and the two original incisions drawn from the root of the alæ nasi on either side to the bridge of the nose are deepened and bevelled off for the reception of the sides or lateral margins of the forehead flap. Great care is taken in the accurate attachment of these sides or lateral margins of the forehead flap by means of single horsehair sutures to the bed prepared for them. Two pieces of drainage-tubing are inserted in the newly formed nostrils. Strips of lint, on which some boric acid ointment has been smeared, are placed over the junction of the lateral margin of the new nose to the cheeks, and also on the gap left on the forehead, and sterilized cotton-wool is applied over all. If the pedicle of the new nose is sufficiently broad, and is not dragged upon, and the angular artery has not been wounded, then all will go well, and there need be no fear of sloughing. Indeed, it will be generally found that, if due aseptic precautions have been taken during the operation, the new nose will to a very large extent adhere by primary union. I allow a fortnight to elapse before dividing the pedicle of the new nose, and in doing so I cut a wedge-shaped slice out of the pedicle, with the object

* For another and a better method of utilizing these nasal flaps, see p. 63 for the description of the operation devised by Captain Henry Smith of the Indian Medical Service, now civil surgeon of Jullundur in the Punjab.

of thinning the remains of it from the under side, so that the new nose may not be parrot-shaped. Great attention should be paid to this last step in the operation, and I perceive that an experienced surgeon like Captain Smith lays particular stress on this precaution. As the inside of the nostrils is clothed with skin, the drainage-tubes may be discarded after ten days, for if the operation has been properly performed there can be no contraction of the nostrils. Some of my results when I was gaining experience were perhaps not so successful from an æsthetic standpoint as my final ones, but this I believe is the usual experience of all surgical operators. None of my numerous operations have been complicated with even a trace of sloughing of the flap taken from the forehead, a circumstance which I attribute to my invariable precautions of neither making the pedicle too narrow nor subjecting the flap to needless manipulation. None of my rhinoplastic operations has had a fatal termination.

It will be observed that the object of raising the flaps from off the nasal bones and turning them downwards is to provide a lining of skin for the newly-formed nostrils, and in this way to prevent their subsequent contraction, which is one of the great obstacles to success in rhinoplasty. These underlying nasal flaps also give strength and support to the new nose, and counteract its tendency to become flattened. As I have already said, this operation was described by me in the pages of the *Lancet* in 1891, and at the meeting of the British Medical Association in 1895.

The next improvement in rhinoplasty was made by Captain Henry Smith, M.D., of the Indian Medical Service, civil surgeon of Jullundur in the Punjab. He published the following description of his operation in the *British Medical Journal* of October 23, 1897 (p. 1181):—

*Rhinoplasty.*—It fell to my lot to perform Keegan's operation on six patients during the past spring. Keegan's flaps are about as perfect as they can be, except that neither Keegan nor any one else that I am aware of, makes any provision for a new septum in place of the one which has been removed by the knife or by disease. Keegan's columella, like all others, leaves a space behind wanting in the septum. To remedy this it struck me, instead of dressing the inner borders of Keegan's two reflected flaps—reflected from the nasal bones—where they overlap one another, to invert them as a scroll, having previously split well the old septum from the insertion of the original columella upwards, and to stitch each one into its respective side of the split septum, and to steeple them together with a horsehair. The tissues are ample, and constitute not only a lining membrane for the new nose, but a substantial septum, leaving wide-open nares. I then twist the end of this under part of the nose to my fancy. When this is done there is no columella required from the forehead. It will at once be seen that this is in reality an effort to imitate the natural lateral nasal cartilages. The result has been in my cases exceedingly satisfactory. There is not such a tendency to flattening of the nose afterwards as when such provision for a septum is not made, and the exposed part of this new septum is less coarse than is the case when a columella has been removed from the forehead. The frontal flap I put on exactly as Keegan describes (*vide* Treves's "Handbook of Surgery"). Once this operation is tried on the dead subject it will be seen how perfect an imitation of a septum can be produced as I describe. In all such rhinoplastic operations it will be observed that the tissues covering the nasal bones of the new nose are very much heavier than in the case of a normal nose. To remedy this, when dressing the stump of my frontal flap, I incise the tissues along the median line over the nasal bones, and with small blunt-pointed scissors I dissect out the frontal aponeurosis element, and as much fat as possible where the frontal flaps cover the bones, and unite the edges with a horsehair suture. This I consider a great improvement, as it renders the new nose much less coarse-looking than it would otherwise be.

I have on two recent occasions performed Captain Smith's operation on the cadaver, and am of opinion that his method of dealing with the flaps raised from the nasal bones is an improvement on my operation, and I would strongly advise its adoption. That it never struck me to try his method, considering the many opportunities I had of doing so, shows how near one may be to a discovery and yet miss it. I nevertheless think that there are cases in which it would be a mistake to take no columna from the forehead. I would also point out that Captain Smith's modification would not be feasible in cases where the mutilator's knife has made a clean sweep of the cartilages of the

nose, and has encroached on the tissues covering the nasal bones. For instance, a reference to Fig. 8A, on page 50, shows at a glance how little skin was left on the nasal bones for the formation of a new septum or columna. In such cases I would suggest that the raw surface of the lower portion of the forehead flap, *i.e.* that portion which will ultimately form the nostrils of the new nose, might be covered with a large skin graft after the method of Thiersch. This idea of providing a skin lining to the nostrils in those cases where the tissues covering the nasal bones have been cut away I have never put into practice, and possibly it might not be always successful, whether from simple non-adhesion, or from expulsion in the effort of sneezing, or from death of the graft itself. No doubt the situation is an awkward one for the application of a graft, but nevertheless it might be worthy of trial.

# APPENDIX A.

*To Page* 12.

THE following description of Sir William Mac Cormac's Taliacotian operation is, with a few unimportant omissions, taken from the Transactions of the Clinical Society of London for the session 1876–77. On May 11, when this paper was read, twelve weeks had elapsed since the first operation, and nine since the second. The girl was brought before the Society, and was seen to present a fairly satisfactory appearance. The paper was illustrated by three engravings of (1) the patient before operation, (2) the apparatus now to be described, and (3) the patient after operation.

"The girl came up to London from the country, and was most anxious for an operation. I determined to attempt the old method of Taliacozzi, rather than the Indian method, by which a considerable frontal scar is of necessity left. I preferred the Italian method too, after much consideration, to making any effort to supplement the missing portion of the nose from the cheeks. . . . I have been unable to find any details of previous similar operations, because I assume the operation has of late years been very rarely performed. . . . The first, and, as I think, the most important thing to do, is to provide means whereby, with the minimum of inconvenience, the patient's arm may be kept in the needful position for the requisite period. . . . The apparatus resembles, but with some modifications, that figured by Taliacozzi himself. . . . A pair of ordinary stout, well-fitting stays was first procured, to which were attached two perineal straps to prevent displacement upwards. A helmet partly made of leather was connected with the stays by a leather band running up the centre of the neck and back. A leather arm-piece, strengthened by a steel band, was moulded so as to extend from the wrist to the shoulder, where it was buckled to the stays. The wrist and hand were fastened to the helmet by a gauntlet, while the elbow could be fixed steadily in any required position by straps running from it to the stays and to the sides of the head-piece, so that there was nowhere any undue strain, the pressure being so evenly distributed that each strap was almost slack. This apparatus was kept applied for some days beforehand, so that any point of undue pressure might be discovered and remedied. The girl was able to sleep soundly in it, and it gave promise of proving perfectly efficient. Meanwhile, I modelled on the deficient nose a guttapercha substitute, and from this was able to project on a flat surface the extent of the deficiency. The first part of the operation was performed on February 12, 1877. The flap was mapped out on the inner aspect of the left upper arm, more than double the actual size of the estimated deficiency. The left arm was the one chosen to supply the flap, and the right side of the nose the one first operated upon, the septum being fashioned at the same time. The flap was left attached at the upper part to the arm by a broad, long pedicle, and so arranged that there should be no traction whatever upon it, whilst the raw surface from which it was taken should be accessible for daily dressing. With the flap, I dissected up the subcutaneous fat down to the muscular sheath. Immediate retraction both of the flap and of the denuded part of the arm took place to a large extent, so that the raw surface on the latter was almost co-extensive with the whole inner aspect of the girl's arm, the flap appearing quite small by comparison. I now made a slightly curved incision nearly parallel to the

free border of the nose on the right side, and about three lines above it, corresponding in fact to where the alar furrow should normally exist. This incision was prolonged some little distance into the cheek in the line of the cheek furrow, whilst the remains of the septum were split open in the median line. This nasal flap could now be turned down so as to become horizontal, or rather a little depressed beneath the horizontal line, to allow for retraction of the ingrafted piece. A triangular flap, the apex being towards the cheek, was thus left exposed on the right lateral aspect of the nose, and into this the triangular-shaped piece from the arm was inserted and accurately attached by suture, the portion to form the septum being sutured in the groove already mentioned formed by splitting the septum. In this way there was no paring of edges, nor was there a single particle of the nose tissue sacrificed; whilst by having so large a line of attachment, being almost surrounded by living tissue, the new flap was much more likely to adhere satisfactorily in the first instance, and from its freer blood supply less prone perhaps to subsequent contraction. Union of the edges of the skin took place in great part by first intention; but on the eighth day some suppuration set in nearly all round the flap, due, I suppose, to the indifferent plastic power of the subcutaneous fatty tissue. Absolutely complete healing of the deeper portion of the flap did not take place for nearly six weeks. After an interval of 21 days the operation was completed by detaching the base of the flap from the arm, cutting it so as to give it a triangular shape, and preparing the left side of the nose to receive it in a manner precisely similar to the right. In the gap thus formed, the detached portion was then adjusted and sutured. The perfect vitality of the now completely severed tissue of the arm was apparent by the furious manner in which it bled—more copiously in fact than did the wound in the cheek or nose. Complete healing of the parts after this second part of the operation took place in a fortnight. The arm when taken out of the apparatus was stiff and painful, but soon recovered itself. The dressings both of the wound on the arm and of the nose were throughout of lint soaked in olive oil. No interruption of the healing process took place beyond that already mentioned. After the first 48 hours scarcely any inconvenience was felt from the apparatus, and the girl never complained at all, except from a slight excoriation on one shoulder, which healed at once when it was discovered and dressed. She generally slept quite well, moved and sat up freely in bed, and indeed could have got up and walked about towards the latter part of her three weeks' durance had she been so disposed. It did not appear to me essential after 14 days to maintain the vascular connection with the arm any longer; nevertheless, as the apparatus was causing no inconvenience and the patient expressed her perfect willingness, I kept it on a week longer before dividing the connection, which allowed every portion of the wound to cicatrize soundly. During the first fortnight or three weeks after the completion of the second operation, considerable contraction took place in the new nose. . . . The wound in the arm is not yet wholly cicatrized, but no inconvenience is likely to result from this. The nostrils have been kept dilated by short pieces of indiarubber tubing, which have answered their purpose admirably."

# APPENDIX B.

*To Page* 16.

In the Print Room of the British Museum there is a copperplate print containing a portrait of Cowasjee as he appeared ten months after the restoration of his nose. The portrait (head and neck only) is in stipple engraving, and is followed by an engraved description of his case. The title of the print, A SINGULAR OPERATION, runs across it in large capital letters, below the portrait and above the description. The portrait with its stippled background has a rectangular form, the extreme measurements of which are $8\frac{3}{8}$ inches high and 7 inches wide. The extreme measurements of the paper containing the print are 14 inches high and $9\frac{3}{8}$ inches wide. Immediately under the portrait are the words, "Painted by J. Wales, Bombay, and Engraved from y^e^ Original Picture by W. Nutter." Below this come the title already mentioned, three small drawings of the wax plate which served as a pattern for the forehead flap, and a small sketch of the man as he appeared before the operation. Then comes the engraved description, extending to the foot of the paper, as follows :—

COWASJEE: A Mahratta of the Cast of Husbandmen. He was a bullock driver with the English Army in the War of 1792; and was made a prisoner by Tippoo, who cut off his nose and one of his hands. In this state he joined the Bombay Army near Seringapatam, and is now a pensioner of the H.E.I. Company. For above twelve months he remained without a nose, when he had a new one put on by a Mahratta Surgeon, a Kumar near Poona. This operation is not uncommon in India, and has been practised for time immemorial. Two of the Medical Gentlemen, Mr. Tho^s^. Cruso and Mr. James Findlay, of the Bombay Presidency, have seen it performed, as follows. A thin plate is fitted to the stump of the nose, so as to make a nose of a good appearance; it is then flattened and laid on the forehead. A line is drawn round the wax, which is then of no further use, and the operator then dissects off as much skin as it covered, leaving undivided a small slip between the Eyes. This slip preserves the circulation till an union has taken place between the new and old parts. The Cicatrice of the stump of the nose is next pared off, and immediately behind this raw part an incision is made thro' the skin, which passes round both Alae and goes along the upper lip. The skin is now brought down from the forehead, and, being twisted half round, its edge is inserted into this incision: so that a nose is formed with a double hold above, and with its Alae and Septum below fixed in the incision. A little Terra Japonica is softned with water, and being spread on slips of cloth, five or six of these are placed over each other to secure the joining. No other dressing but this cement is used for four days; it is then removed, and cloths dipped in Ghee (a kind of butter) are applied. The connecting slip of skin is divided about the 25th day, when a little more dissection is necessary to improve the appearance of the new nose. For five or six days after the operation the Patient is made to lie on his back, and on the 10th day bits of soft cloth are put into the nostrils to keep them sufficiently open. This operation is always successful. The artificial nose is secure, and looks nearly as well as the natural one; nor is the scar on the forehead very observable after a length of time.

The Picture from which this Engraving is made was painted in Jan^y^. 1794, ten months after the operation.

Published Jan^y^ 1st, 1795, by James Wales of Bombay, at Mr. R. Cribbs, Carver & Gilder, 288, Holborn, London.

It will be seen that the above description differs in some unimportant particulars from the letter in the *Gentleman's Magazine* given at page 15. The portrait of Cowasjee in the *Gentleman's Magazine* is in copperplate line engraving, and is similar to but much smaller than that in the print now described; the name of the engraver is Longmate, but that of the painter is not given. Dr. Eduard Zeis, in his "Die Literatur und Geschichte der Plastischen Chirurgie" (Leipzig, 1863), says at page 60 that the library of the Herzogliches Collegium Anatomico-Chirurgicum at Brunswick possesses a copperplate portrait of Cowasjee with a nearly, but not quite, identical engraved English account of the case. The name of the engraver is given as R. Mabon, and at the foot are the words, "Bombay. Published by J. Wales, as the Act directs, 20 March, 1794."

The portraits of Cowasjee, both in the *Gentleman's Magazine* and in the print belonging to the British Museum, show an excellently formed nose, which the casual beholder would hardly suspect had been brought from the forehead. Taken in connection with the description attached, and also with the small sketch of the features before operation, it is extremely probable that no longitudinal incision was made along the dorsum of the nose to receive the part of the forehead flap immediately adjoining the pedicle, so that the pedicle seems to have been extended across the strip of sound skin covering the bridge of the nose, and to have been divided in the usual way after the adhesion of the terminal portion of the flap was complete. The term "Kumar," applied to the Mahratta surgeon, signifies a man belonging to the caste of potters. Thomas Pennant, in his "View of Hindostan" (London, 1798, vol. ii. p. 237), says, "The *Hircarrah*, or *Madras Gazette*, of August 5, 1794, informs us that Cowasjee two years before fell under the displeasure of Tippoo Sultan. . . . The sufferer applied to the great restorer of Hindostan noses, and a new one, equal to all the uses of its predecessor, immediately rose in its place."

In his "Account of Two Successful Operations for Restoring a Lost Nose from the Integuments of the Forehead" (London, 1816, pp. ii. and 102; dedicated, by permission, to the Prince of Wales, afterwards George IV.), Mr. J. C. Carpue gives the following additional particulars relative to Cowasjee.

(p. 38) "On undertaking the first of the two cases to be hereafter narrated, I was induced to make such personal inquiries as were within my reach in this country concerning the Indian method. I did myself the honour to write to Sir Charles Mallet, who had resided many years in India, and who obligingly confirmed to me the report that this had been a common operation in India from time immemorial, adding that it had always been performed by the caste of potters or brickmakers, and that though not invariably it was usually successful. Mr. James Stuart Hall, a gentleman who was many years in India, assured me that he had seen the operation performed, and that it was of tedious length. From Dr. Barry of the India service I learned that he also had seen the operation, that it occupied an hour and a half and was performed with an old razor, the edge of which being continually blunted in dissection was every moment reset. Tow was introduced to support the nose, but no attempt to form nostrils by adding a septum was made. I am obligingly informed by Major Heitland of the Indian service that in India several years ago in the time of Hyder Ali, Mr. Lucas, an English surgeon, was in several instances successful in the operation, which he copied from the Hindoo practitioners. . . . I have heard that about the year 1803 the nasal operation by the Indian method was performed in London without success. The patient I am told is still alive, in India."

(p. 100) "Since the preceding sheets have passed the press, some additional

facts regarding the Indian operation and particularly the case of Cowasjee, have come to my knowledge. Lieutenant-Colonel Ward, of the India service, but at this time resident in London, was the commanding officer of Cowasjee at the time when the latter was mutilated by the order of Tippoo Sultan and also witnessed the operation performed for restoring the nose. This gentleman has done me the honour to communicate the following particulars. Cowasjee and four other native soldiers were made prisoners by a marauding party of Tippoo Sultan. The enemy cut off the hands and noses of all the five and then sent them back to the English, with leaves bound over the stumps of their arms to stop the bleeding, but with the remains of their noses as they were left by the knife. In this deplorable state they entered Poonah. The wounds were healed and pensions granted to the unhappy sufferers. Some time had elapsed, when one day at Poonah a native merchant came to the house of Sir Charles Warre Malet, the British resident at that city, offering for sale oilcloth, and stating his place of residence to be four hundred miles from Poonah. A cicatrix or scar being observed on the centre of the merchant's nose, he was asked how he came by it; upon which he showed another scar on his forehead and explained the operation he had undergone. He confessed that he had been deprived of his nose by the executioner as a punishment for adultery; and added that his new one was the work of an artist who lived where he resided and who frequently did the same for others. Upon receiving this account, and immediately thinking of Cowasjee and his fellows, Sir Charles Malet caused the operator to come to Poonah, where he gave new noses to all the five. It was understood at Poonah that this operator was the only one in India; but that the art had been hereditary in his family."

Mr. Joseph Constantine Carpue, who became so celebrated in connection with rhinoplasty, was born in London in 1764, his parents being resident at Brook Green. He studied medicine at St. George's Hospital, travelled much on the Continent, was for twelve years staff-surgeon at the Duke of York's Hospital, Chelsea, and on resigning military service he held the appointment of surgeon to the National Vaccine Institution for the remainder of his life. He was a teacher of anatomy and surgery from 1800 to 1832. He died in January, 1846. There are biographical notices of him in Callisen's "Medicinisches Schriftsteller-Lexicon der jetzt lebenden Aerzte, Wundärzte, Geburtshelfer, Apotheker, und Naturforscher aller gebildeten Völker" (volume iii., Copenhagen, 1830); in the obituary in the *Lancet* of February 7, 1846; in the "Dictionnaire Encyclopédique des Sciences Médicales" (tome xii., Paris, 1871); in Dr. August Hirsch's "Biographisches Lexikon der Hervorragenden Aerzte Aller Zeiten und Völker" (Vienna and Leipzig, 1884); and in the "Dictionary of National Biography" (volume ix., London, 1887). The *Lancet* of September 26, 1829 (p. 17) contains an advertisement of his course of lectures. Brief references will also be found in J. F. Clarke's "Autobiographical Recollections of the Medical Profession" (London, 1874); in Rev. C. L. Feltoe's "Memorials of John Flint South" (London, 1884); and in J. B. Bailey's "Diary of a Resurrectionist" (London, 1896).

It is a curious circumstance that in Indian medical history prior to the picture painted by J. Wales, there does not appear to be any surviving record of rhinoplasty by means of a forehead flap. In the *Suśruta Ayurvéda* there is a description of rhinoplasty by means of a cheek flap. Dr. T. A. Wise, of the Bengal Medical Service, in his "Commentary on the Hindu System of Medicine" (Calcutta, 1845), says, on pp. 2 and 8, that the *Ayurvéda* is the sacred medical record of the Hindus, and is of the highest antiquity and authority. Little of the original work has escaped the ravages of time; but the abridgment of Suśruta, son of Visámitra, is still preserved, and, after Charaka, it is the oldest book on medicine which the Hindus possess, and is still of

high authority. The following occurs at pp. 183 and 189 of Dr. Wise's combined commentary and translation.

"SECTION VIII.

"*Directions for performing Operations.*

. . . . . .

"*When the nose is cut off or destroyed by diseases.*—The former is a frequent punishment in the native courts. A fresh leaf is cut of exactly the size of the nose, it is then to be placed upon the cheek, and the necessary quantity of skin and cellular membrane is to be dissected. The nose is then to be scarified, and after dissecting up the flap it is to be placed upon the raw part of the nose, to which it will adhere. Sutures and bandages are applied to keep the parts together. After the bandage has been applied, a couple of wooden cannulæ are to be introduced into the nostril to allow breathing and to support the new nose. A piece of linen cloth previously soaked in oil to be applied over the bandage."

Dr. Eduard Zeis (*op. cit.* p. 59) gives a German translation of this passage made from the original; he also refers to Dr. Wise's rendering, and says that it is tolerably accurate.

# APPENDIX C.

*To Page* 17.

THE following two cases form the groundwork of Carpue's treatise described in Appendix B, "An Account of Two Successful Operations for Restoring a Lost Nose from the Integuments of the Forehead."

CASE I.

"In the month of September, 1814, I was applied to by an officer in his Majesty's army whose nose was in a mutilated state, and who introduced himself by saying: 'Sir, you see my unfortunate situation. I was informed at Gibraltar that you had performed the operation for restoring a lost nose. I am in the army, and having been bred to that profession, I wish to undergo the operation in order to put myself again in condition for active service.'

"I readily consented, but at the same time apprised my patient that what he had previously heard was founded in mistake. I had long wished for an opportunity of performing the operation, and for the space of fifteen years had constantly recommended it to my pupils."

After stating that the patient had taken mercury to excess for a liver complaint, he proceeds—

"The consequence of this excessive use of mercury was that the septum of the nose began to slough, etc. The patient's constitution being at the same time greatly injured, the mercury was at length laid aside. Thus relieved from the occasion of his sufferings he gradually recovered his health; but with the loss of the septum, all the anterior part of the cartilage, and in truth the whole front of the nose, a small portion of the alæ or sides of the nostrils excepted. The nasal bones remained entire.

. . . . . .

"At length on the 23rd of October, accompanied by my friends Messrs. Sawrey and Warren, and in the presence of Mr. Lamert, surgeon to his Majesty's thirtieth regiment of foot, who attended at the request of the patient, I proceeded to perform the operation.

"The patient's forehead was unusually low, and on that account, some days previously to performing the operation I removed the hair by the roots from the scalp: the integuments of that part being required to form the septum or base of the nose. This portion of the integuments to be dissected was my only subject of uneasiness, my fear being that the hair would grow and prevent adhesion.

"Having well ascertained the size of the graft required, by means of a wax model which I then flattened and laid on the forehead, I drew the outline round it with red paint. I drew lines also on the sides where I was to make the incision and a line beneath for the septum. This done, the patient leaped upon a table, and laying himself on his back with the head supported by a pillow refused to be held, saying, 'I hope I shall behave like a man!' Nor did he make the smallest complaint during the operation.

"I now made an incision on the right and then on the left; and dissected out a sufficient quantity of the face with some muscular fibres of the compressor naris and levator and depressor labii superioris alæque nasi to receive what was to be dissected from the forehead. I made a simple incision for receiving of the septum, considering that the inner part of the integuments would certainly unite with the upper part, and that if when adhesion took place on the upper part of the lip hairs should grow on the lower part of the integuments intended to form the septum, and the old and new parts in consequence should not unite, I could then with greater safety dissect the roots of the hair from the part and bring it into contact with the lower part of the incision. My apprehensions, however, appeared ultimately to have been groundless, for both surfaces readily united and an excellent septum was formed.

"The parts of the face being prepared for the reception of the new nose, I began that part of the operation which belongs to the forehead by making an incision along the lines I had drawn. I then dissected the integuments, merely leaving the

pericranium. The angular artery on the left side bled freely, but the loss of blood was very inconsiderable, and there was no occasion for tying the artery. The part which was dissected and which hung down became of a purple colour, and the patient at this period informed me that his forehead felt extremely cold. I applied warm sponges, which afforded great relief, and which were continued during the remainder of the operation.

"My next steps were to make the *turn* of the dissected parts, and introduced the septum into the incision of the upper lip, where I confined it by ligature. After this I brought the integuments exactly into contact with the integuments on the left side and fixed them also by two ligatures, and then I did the same on the right. I introduced lint to distend the nostrils and applied straps of adhesive plaster to keep the integuments in contact. Everything being thus done for the nose, my concluding care was to bring the edges of the integuments on the forehead and between the eyebrows as near together as possible, and keep them so by means of adhesive plaster.

"A brother officer of the patient having been in the room during the operation, and kept an account of the time by his watch, I am enabled to state that it occupied exactly a quarter of an hour, the dissection having employed nine minutes and the ligatures six. After this the application of the necessary bandages, changing the linen of the patient, sponging away the blood and placing the patient in bed, consumed twenty-two minutes more, making in the whole thirty-seven minutes. Short however as was the time, had it not been for my habit of frequently performing operations on English soldiers, I must have been astonished at the fortitude with which my patient went through this. When it was past he observed that 'It was no child's play—extremely painful—but there was no use in complaining—that he felt little or nothing after the dressing was applied.'

. . . . . .

"The patient being put to bed enjoyed some sleep. The room was kept very warm and a flannel laid on the patient's head. In the night there was hæmorrhage, but not in any quantity. Perfectly quiet the next day. Pulse as before the operation. Much inclination for food, but allowed only barley water and warm jellies.

"On the third day I took off the dressings. It will be supposed that I felt exceedingly anxious on this occasion; for though I had every reason to expect adhesion it was possible that it had not taken place. The parts however adhered; and I had the high satisfaction to hear the officer before alluded to exclaim from the foot of the bed, 'My G—d, there *is* a nose!'

"Adhesion, agreeably with my most sanguine hopes, had taken place in every part, and the nose was of the same colour with the face.

. . . . . .

"Four months after the operation I made a dissection of the integuments on the bridge of the nose, which I united from the turn, which had disappeared, and confined them by ligature."

. . . . . .

## Case II.

The following is an abstract of Carpue's description of the case. The patient was Lieutenant Latham of the Third Foot, who was wounded at the battle of Albuera, in Spain, fought on May 16, 1810. In rescuing one of the colours of his regiment he lost an arm by a sabre-cut, and altogether received five wounds, one of which took off part of his cheek and nose. His brother officers, in acknowledgment of his gallantry, presented him with a medal, and the commander-in-chief promoted him to the rank of captain. On January 20, 1815, the Prince Regent (afterwards George IV.) placed him in Mr. Carpue's care. Two operations were performed, the second one on October 7. Perfect adhesion took place, but recovery seems to have been incomplete at the time of writing the memoir.

THE END.

LONDON: PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,
STAMFORD STREET AND CHARING CROSS.