

## DEPARTMENT OF ORAL SURGERY AND SURGICAL ORTHODONTIA

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### PLASTIC SURGERY OF THE FACE\*

BY JOSEPH C. BECK, M.D., AND JACOB JESSER, D.D.S., CHICAGO, ILLINOIS

THE subject I am to present to you was selected by your secretary, and I thought that in order to make it as interesting as possible I would present some cases, photographs and casts rather than lantern slides, dealing with plastic surgery. I have nothing to present to you in the way of war surgery, and I make this statement at the outset so that the gentlemen who are to discuss my remarks may know that these are not war cases.

We have learned much in regard to war surgery from the English surgeons, particularly Gillies, which we can now apply in civil practice. One of the two things I have learned from him is the use of osteoperiosteal grafts for the reconstruction of bony structures of the upper and lower jaw and nose; and the other is the use of long migrating tube flaps. I might simply illustrate this by saying that a big flap may be taken from the side of the chest and formed into a tube, sewed up upon itself with the epidermis externally and allowing it to become firm and self-sustaining. This is quite an advance in plastic surgery. These osteoperiosteal grafts, usually from the tibia, can be made as long as you wish to have them.

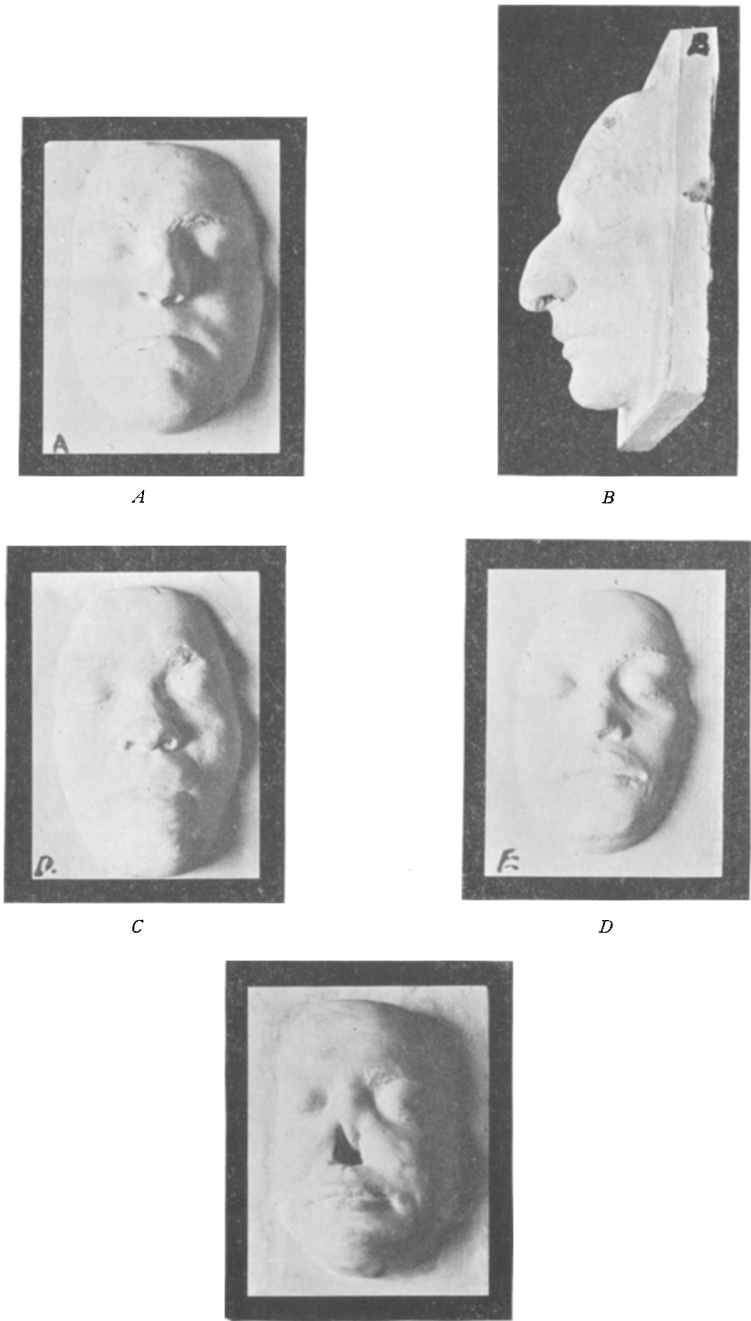
In civil practice we have two types of plastic surgery: (1) cosmetic type, such as hump nose, saddle nose, or a lateral deflection or twist; and (2) reconstruction type due to pathologic changes or injury. These are conditions which are mostly dealt with by men in our line of work (rhinologists) and require very little explanation.

These casts will give you an idea of the usual cosmetic deformities which require correction.

Such a deformity as shown in Fig. 1-A is best corrected by refracturing and plating. A large hump of the nose (Fig. 1-B) would be dealt with by re-

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moval of the hump through the interior of the nose. A saddle nose such as shown in Fig. 1-*C* can be dealt with by the introduction of a tibial graft through the interior of the nose. One of the most difficult things to correct is a lateral defect of the nose, Fig. 1-*D*, where the cartilage is missing. In such



*E*  
Fig. 1.

a case transplantation of cartilage is used, although the result at best is not very good. A deformity such as that shown in Fig. 1-E, where you have marked destruction, is analogous probably to a war deformity and requires a great deal more work than the previously shown cases.

The cases I am going to show are extreme deformities of the face, particularly the nose (pathologic deformities), in which reconstruction has been attempted.

Case I. (Fig. 2.) A young lady who has been the subject of maltreatment. This plate shows what her condition was originally (Fig. 2-A). We see many cases of imaginary deformities in people who seek some means of having the deformity corrected and they should be discouraged from such action.

This girl applied to physicians to correct the deformity, which would seem to be a broad tip of the nose, and since no surgeon would do it for her, she consulted a so-called beauty specialist or charlatan who injected a mass

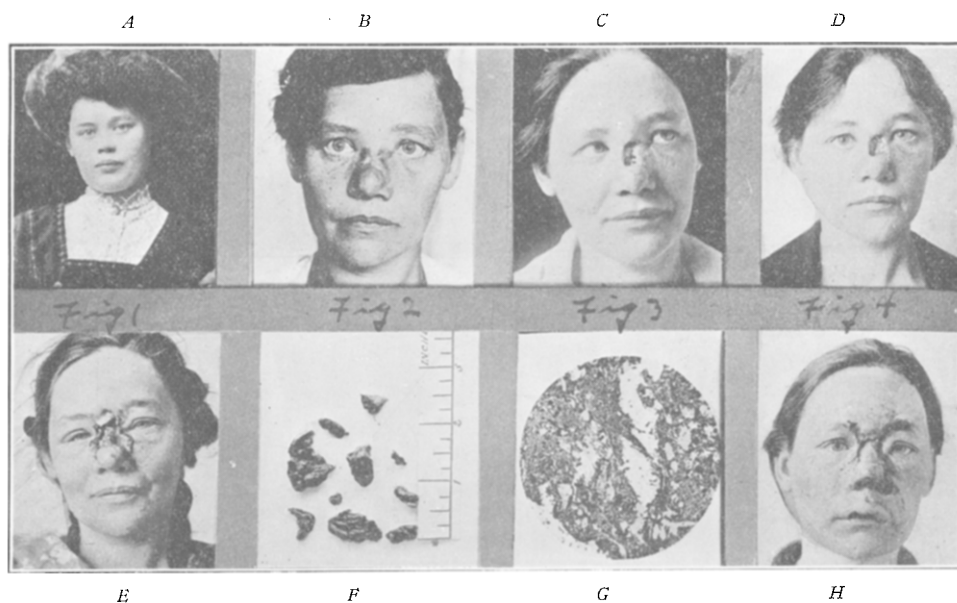


Fig. 2.

of paraffin. The injection of paraffin was followed by a growth of tissue around the paraffin, causing a tumor or paraffinoma. This tumor was not only deforming, but it discolored the skin and became very painful, so that it was necessary for me to remove that material in order to relieve her pain. These pictures show in series (Fig. 2) what was done. I excised the paraffinoma which reached into the orbit, the cheek and down over the lip. Subsequently I used twenty-five to fifty milligrams of radium over the connective tissue to stop this growth. The next step will be a plastic operation, where we shall take the skin either from the arm or some neighboring part of the face.

I present this case as warning against the use of injecting paraffin into tissues. One never knows when he is going to strike a subject that will respond to the growth of a paraffinoma which may take on almost malignancy, causing terrific pain. Paraffinoma not only causes pressure on the nerves but

may produce a neuroma and a neuroparaffinoma has been claimed to be malignant. Of course it is not so malignant as a sarcoma or carcinoma.

Case II came to me with the condition as shown in Fig. 3, *A* and *B*, the result of lues.

I proceeded in her case by reconstructing the nose from what was left of

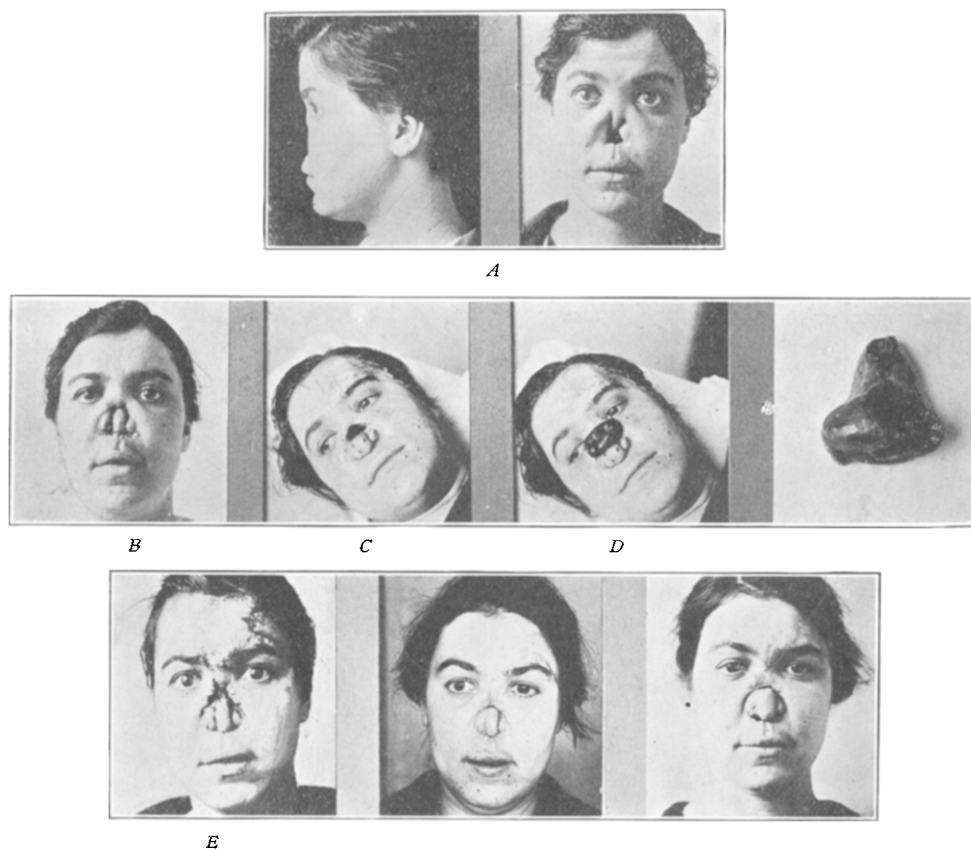


Fig. 3.

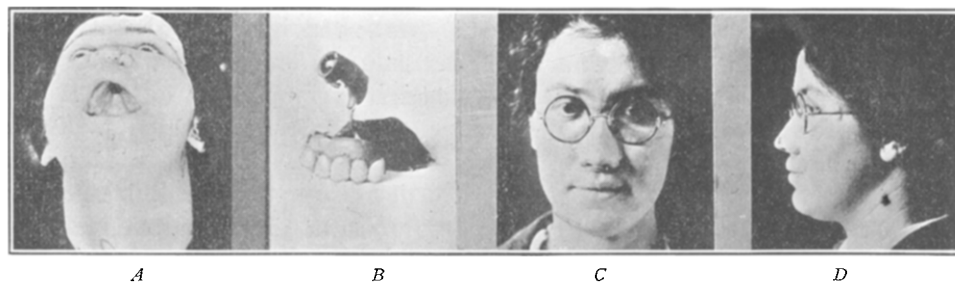


Fig. 4.

it, rebuilding the tissues from the neighboring parts (Fig. 3-*B*) and bringing it out so that I formed a sort of tip to the nose (Fig. 3-*B*). I made a hole above the tip of the nose (Fig. 3-*C*), and brought the tip farther down. A triangular flap was brought from the forehead sliding it down and uniting it to the tip of the

nose (*C*). Now comes the further reconstruction of building up of this tip and making the flaps larger to bring the tip of the nose out. She had a perforation of the palate (Fig. 4-*A*) and wore a plate (*B*) which was so made as to push the tip of the nose out. When all reconstructed work is completed a permanent plate will be made with an appliance to supply the support lost



A



B

Fig. 5.

through the lack of the nasal bones. She is now wearing an artificial nose made by Dr. Jesser, until further reconstructive work is performed. (Fig. 4-*C* and *D*.)

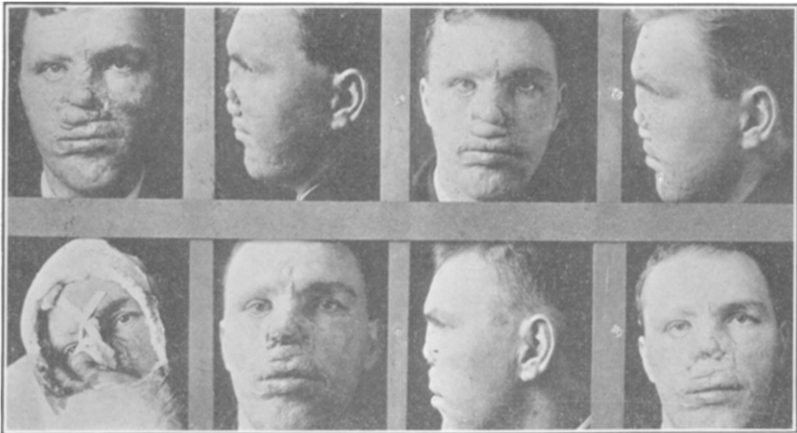
The next case I have to show is an interesting one on account of the pathology. This man came with a true tuberculosis of the anterior part of the



*A*



*B*



*C*

Fig. 6.

nose, which had to be entirely sacrificed both by surgery and radium treatment. (Fig. 5.) The tuberculosis was entirely cured. It is two years since the operation was performed, and now comes the reconstruction. It is a fairly good looking cosmetic nose, although not artistic. Nothing is more gratifying than the appreciation of these patients for what you do for them in a cosmetic way. It is their own nose, and no matter how beautiful the prosthesis they do not want it. They want their own nose. These pictures show as we have proceeded in this case the steps of the various operations. (Fig. 5.) This work consists of rebuilding constantly, taking a little tissue from here and there. We are ready now to do a Wolfe graft, the nose having been lined inside and skin graft outside with fair nutrition. He is now ready to have the bridge and nostrils made.

The next case is interesting from the standpoint of the etiology. When a child this boy had some form of eczema or erythema and the family physician by mistake applied a corrosive substance which destroyed the greater part of the nose as well as the eyelids and lips. As you see by the first picture (Fig. 6) there is no nose and there is very much scarring of the lip and face. These pictures represent the number of operations that he has been subjected to to reconstruct what we have so far. He has a bridge to his nose, a little finger having been used to reconstruct the bony structure. He has an upper lip which we made with a flap from his arm and portion of his eyebrow, which we transplanted from the back of his head, taking pieces of skin (Wolfe grafts) with hair and transplanting them. Some of these did not live, but others have remained. Recently we have made him nostrils. He has a septum, and we are using the inlays of rubber tissue until we have good sized nostrils, so that he can breathe through his nose, next we shall make a columella.

Another interesting feature is the anesthetic. This man has had thirty-three operations, all done under general anesthesia. We must marvel at that, because his blood, urine, kidneys and heart were without any bad effects from the anesthetic, and this contributes something in the way of science from that standpoint. The anesthetics were scopolamine and morphine with a slight amount of chloroform. The patient could not take a local anesthesia.

Fig. 7 shows a cleft palate case. The patient has been operated upon a number of times, cicatrization having taken place making it impossible to do any shifting of tissue, as is usually done. He had a complete cleft which reached far over to the anterior surface near the teeth. I was able by the aid of Federspiel clamps to bring the parts together so that I united the uvula and rest of the soft palate. There was still a large anterior bony perforation which I failed to close and this I recently succeeded in doing. He did not want to wear a plate so that I devised another method by sacrificing the inferior turbinate. I removed half of the posterior end of the inferior turbinate and left it attached anteriorly, freshened the margin of the perforation and sutured the turbinate to the margin with wires. To my great satisfaction the turbinate healed in and closed the palate. In small perforations of the hard palate where the ordinary methods fail, this method should prove very useful.

Here is a young man I show on account of the method used to reach a

large tumor in the postnasal space, a fibrosarcoma which I was able to reach through the palate by slitting the palate on one side of the uvula up to the hard palate, retracting, and delivering the tumor and then leaving the palate open for subsequent x-ray treatments.

While speaking about cleft palates I wish to say that no matter how well the palate is united, they never have the clear distinct voice which it is possible to produce with a prosthesis. They do not seem to have occlusion of the postnasal space, even with all the intensive training they receive, and their articulation is not as good as it might be.

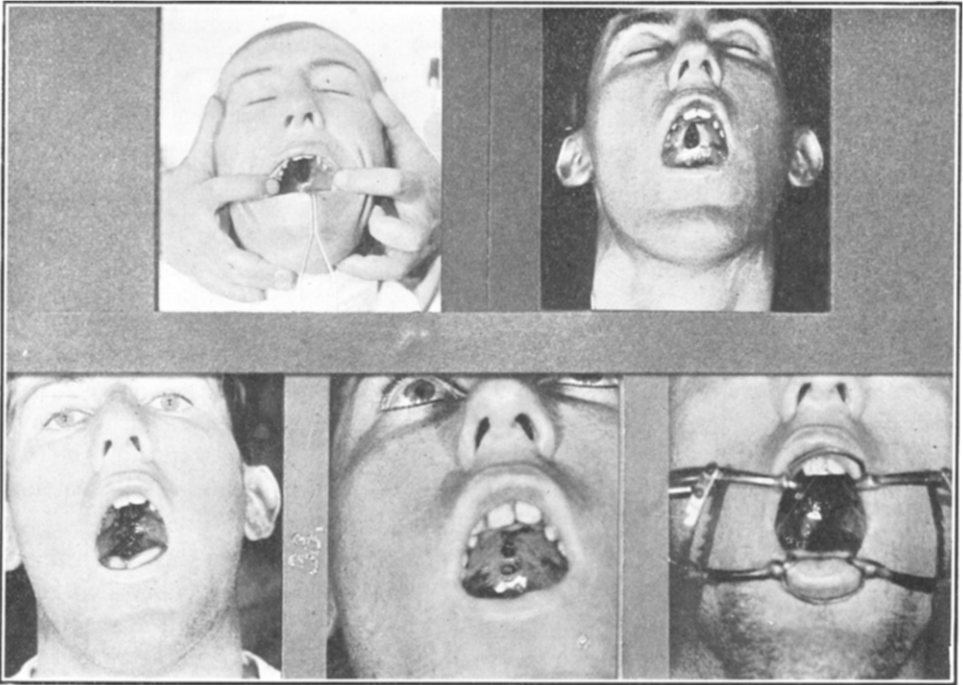


Fig. 7.

#### DISCUSSION

*Major Joseph D. Eby, Washington, D. C.*—When I was ordered to the colors in September, 1917, I reported to the School of Plastic Surgery in St. Louis, the first one of its kind, where one of our instructors was Dr. Beck. I had the pleasure as well as honor of obtaining a wonderful amount of information from him in that school. His work was demonstrated on several injected cadavers, freshly prepared, which showed all forms of rhinoplastic and other forms of facial plastic repairs. That was the laying of an excellent foundation for the work which materialized and came into my hands during the last two years of my career.

After the signing of the armistice I was ordered to the Walter Reed Hospital, Washington, D. C., which was designated as one of three institutions for the correction of maxillo-facial injuries. One of the institutions was shortly afterward closed. So with my associate, it has been my honor and privilege as a young man and as an orthodontist to serve between 450 to 500 of our wounded boys who needed hospital attention.

Dr. Beck paid a well deserved compliment to Major Gillies, of England, and in our work we have received an abstract of the literature and have been brought in contact with



many men who have treated maxillo-facial injuries. My present associate (Dr. Williams) spent several months with Major Gillies. Through Colonel Logan, I was brought into close personal contact with Major Gillies, the only essayist at the National Dental Association meeting last year, who spoke on maxillo-facial injuries and their treatment.

I feel in the light of my knowledge of the work done by our Allies, as well as by such men as Colonel Blair, Major Schaefer, and last, but not least, Lieutenant-Colonel Robert H. Ivy, of Philadelphia, our United States boys received as good treatment as the soldiers of any other nation from these great and skillful men, and the high character of their surgical and plastic work shows that they need not take off their hats to anybody. (Applause.)

The operation which Dr. Beck spoke of as having been presented by Major Gillies in which pieces of osteoperiosteum containing a portion of the cortical process of the outer plate of the frontal bone are everted by means of a pedicle beneath a soft tissue pattern for nose replacement from the forehead, has been given the name by Major Gillies of the Indian operation, claiming that the Indians had long ago practiced rhinoplasty for certain injuries or deformities.

I did not receive any communication as to what the nature of Dr. Beck's paper would be and what ground he would very likely cover, hence some of my remarks may not be exactly relevant in discussing Dr. Beck's paper, but will show those conditions met with in war surgery.

We have acquired 1500 photographic records of these patients, as well as innumerable wax colored casts and models of all forms. While the British and French literature is in advance of ours, I feel quite sure that within the next year, with the continued preparation of the work done in this country, you will find that a great number of very interesting things will be forthcoming and much better than I am capable of showing here.

An important question for consideration is the one of plastic repair of eyebrows from bullets particularly, as well as loss of substance. Colonel Ivy has been instrumental in making some partial repairs by cutting a small pedicle from the border of the hair line with the broadening of the pedicle, carrying the superficial temporal supply down by suturing the anterior three-fourths of the grafts to the desired position, thus establishing collateral circulation, and the pedicle being returned as much as possible to its original position. One or two slight secondary operations will improve the condition very materially, so that brow plastic is a most effectual means for the location of material.

In some instances of very high explosive fragments, the orbital socket is obliterated, or the orbit has to be enucleated, and some additional pedicle grafting is necessary to stimulate the eyelids or to provide a sulcus to hold the prosthesis space. We must figure on a slit border of a flap that has been thrown up to relieve the ectropium of the lid, and after slitting the border, comb the eyebrow, apply a graft, using some stiffening paste or wax, and a proper strip of material which will carry a heavy skin graft to replace the lost eyelashes.

We have had some remarkable plastic work done in the eye service in cases of phosphorus burns and smokeless powder burns. In some instances the eyes have been burnt terrifically.

I recall one case in which both upper eyelids were completely destroyed, with remarkable restoration following a plastic operation, and save for the absence of the orbicularis palpebrarum muscle and its function in the closure of the eyes, one would hardly realize that plastic repair had been made of the upper lid. This repair was done by everting a pedicle from the cheek so that collateral circulation was picked up, the flap excised and returned.

In another patient a high explosive fragment entered through the parotid gland region in front of the ear, traversed beneath the malar process and the zygomatic fossa and destroyed the nasal process to the right and left superior maxillary bone, and destroyed sufficient of the glabella to cause loss of support. The right superior maxilla is lost. The overlying skin was intact. The tip of the styloid process was saved. The scar was excised and redundant tissue everted into a flap.

There is a very intimate borderline between orthodontia in our study of facial cosmetics and in our ability to aid the plastic surgeon, and we should be perfectly familiar with the

possibilities of his work in order that he may aid us. If that such is true, we have an instance in this particular case.

We have several cases where the half of the missile was through the face, undermining the floor of the orbit, establishing double vision, not destroying the eye, in which we had to elevate the eye. We took cortical bone from the tibia, cutting a horizontal slot in the malar eminence and a corresponding nick in the nasal border of the superior maxilla, and the cortical bone inlaid in position to endeavor to sustain the weight of the eye. The cartilage in that instance would absorb by pressure. Stimulation of this tissue was sufficient. It was first essential to undermine a portion of the face; the entire middle curve of the face was cut into the least, and what the orthodontist could do was to provide anchorage for the nostril and hold it, and later provide a stage for modeling composition to hold a large flap of skin to epithelize the great raw surface.

Of all the wonderful things our beloved Dr. Case has done, his technic for taking impressions and making an artificial velum or soft palate restoration, is one of the best. In the same manner we secure remarkably accurate impressions, making a soft rubber bulb insert, and later an edentulous ridge containing teeth upon which a second insert can be snapped. This patient looks quite himself again.

Where the tip of the styloid is involved in an injury, particularly where the missile has passed through the face and caused at the point of exit great loss, such a case can be handled by the free grafting of fat taken from the abdomen or undermining the skin, or taking the fat from adjacent areas from the pedicle. There is no tendency toward growth of the subcutaneous fascia in the face or abdomen. It is a question always of not having to perform pedicle grafting by bringing skin from remote areas, with possibly excising scar tissue and undermining the adjacent skin and drawing it together.

In presenting these cases, I hope to impress you with the close relation existing between plastic surgery and orthodontia. There are certain cases in which the best results can only be obtained when orthodontic methods are employed to stabilize the parts during repair. If I have given you anything of interest I feel greatly repaid for coming here.

*Dr. Joseph C. Beck* (closing the discussion).—The cases presented by Major Eby are a revelation to me, because before I went to Europe I had no idea from my reading of the literature that there was such remarkable progress being made in orthodontia and in prosthetic work.

In my visit to the Walter Reed Hospital Colonel Ivy was kind enough to show me everything he had. I met Dr. Schaefer in Baltimore; I visited Fort McHenry, and saw much of Dr. Blair's work in Jefferson. I spent a number of days in these different places to acquaint myself with what had been done in this war. I am sure, one thing that has been accomplished is a more thorough knowledge of mechanics in connection with the support of tissue for plastic surgery. Even now following the war, in the enemy country which I visited after the armistice, particularly Prague, they were not making use of the advances that had been made in plastic surgery. Among the advances that have been made are the osteogenesis that follows implantation and the tubal flaps of Gillies.

I want to correct Major Eby in one statement he made about the so-called Indian operation where he said the Indians were the ones that used these flaps. You will find in the literature that where a flap is taken from the forehead it is known as the Hindu operation.

I agree with what Major Eby said about American records of cases and the importance of their publication, and if the material that has been accumulated can be published in book form, it will prove invaluable to plastic surgeons and orthodontists.

Perhaps I ought to apologize for bringing this subject before you in such an unfinished manner, because had I known the discussion was going to be such as it was, I would have brought with me reports of cases that occurred in my own experience during the war, but I thought the subject I have presented and the cases I have shown would be of more interest to you.