exposed. A fresh incision should then be made lower down (for example, over the popliteal vessels). Wounds in arteries are easily sewn up, and one should not hesitate to make multiple incisions if occasion demands it.

The Time Factor.

The early cases are those which do well, and this for very definite and precise reasons. The lodgement of a clot sets up two things which will in a few hours militate against a successful issue. These are: first, endothelial changes which will cause a fresh thrombosis after the clot has been once removed; and secondly, a thrombosis slowly spreads from the original clot and may assume such dimensions as to make complete removal impossible. Within the first five or six hours these untoward effects are not likely to menace seriously the result, but after ten hours at least they become increasingly threatening, so that at the end of twenty-four hours operation will usually be hopeless. It is probable that in the late successful cases already reported complete and absolute obstruction has not been present quite so long as would appear, or that a collateral circulation has in reality saved the limb. If surgery is to achieve a high percentage of successes it must be clearly understood that no cases (save perhaps haemorrhages) are more urgent than these. This lesson will be learned the more easily by reference to Table II, which I have made up from Key's collection (up to 1922), and those successes which have been published since.

TABLE II.—Time Factor. Twenty-eight Successful Embolectomies.

Time.	Key's Series.	New Series (1922-25).	Totals.
	Successes.	Successes.	
From 1 to 5 hours	5	10	15
From 6 to 10 "	4	2	6
From 11 to 15 "	2	1	3
From 16 to 20 "	1	1	2
From 21 to 24 "	1	1	2
Totals	13	15	28

For the sake of completeness the whole series of embolectomies which have been published since Key's paper (so far as I have been able to find them) are given in Table I. These new cases number 28, making, with Key's 45, a total of 73. The highest percentage of good results in the later series has been commented upon above; this amelioration appears to have been due to earlier operation alone. Few of the cases abstracted in the table call for special comment. Only four operations undertaken within ten hours failed. In the nature of things a very high percentage of successes is unlikely ever to be attained, for emboli are apt to be multiple, and further infarction elsewhere will sometimes carry off a patient in whom a local success has been won; moreover, the advanced age of the patient and the frequency of heart disease often make the subjects bad surgical risks.

Olivecrona's case is especially deserving of comment as it bears special testimony to the value of embolectomy. A woman, aged 41, had suffered from valvular heart disease (mitral stenosis) for years. Pulmonary embolism had been observed on several occasions. In July, 1922, she was operated upon successfully by Michaëlsson (Case 3 in Table I) for embolism of the left common femoral. In September, 1923, she suffered embolism of the right common femoral and again success was achieved (Olivecrona, Case 16 in Table I). Six months later the patient was well and no evidences of disturbance of circulation in either leg could be detected. Söderlund's second case illustrates the old and the new methods (Case 27, Table I). A woman of 46 with chronic heart disease had an embolism of the right popliteal artery. No doctor was summoned for two days, gangrene supervened, and supracondylar amputation was performed. The patient was discharged well. Some months later embolism of the left brachial artery occurred. This

time she was sent into hospital immediately, where the embolus was removed, five and a half hours after lodging, with complete success. Two months later she was back at her work making paper flowers. These cases illustrate well the results which may at times be obtained, whilst they also remind us of the possibility or even probability of further embolism in heart cases.

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A METHOD OF NASAL PLASTIC REPAIR BY CARTILAGE GRAFT.

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THE method here described has proved useful in the treatment of nasal deformities, especially those types where depression extends high up, when other measures have been unsatisfactory. A typical case best exemplifies the steps necessary.

A girl, aged 15½ years, was brought to me late in 1923 for the deformity indicated in Fig. 1. When 4 years of age she had had a blow which crushed the nose. No special treatment had been adopted. She had a most disfiguring depression of the middle and upper parts of the nose; the nasal bones appeared to have participated in the damage, and there was marked obstruction

FIG. 1

FIG. 2

from the remains of the septum. The tip of the nose had suffered from atrophy of the septal cartilage, and was sharp, as well as being turned right up by the depression above. The first step was to secure a satisfactory airway, by resecting the shreds of cartilage embedded in fibrous tissue, which represented the remains of the septum, and by freeing the adhesions which had formed between this and the sides of the nose (in front) and the turbinates (behind). When healing was complete this object had been attained, but the appearance was hardly altered.

Four months later, under general anaesthesia, a graft of rib cartilage was inserted to raise the depressed portion. The alar cartilages had escaped, and formed the lower support of the graft; the upper end rested on the remains of the nasal bones.

Description of Operation.

An incision is made in the skin, beginning at a point half-way along the lateral margin of one nostril, running forward along this margin to the anterior end, being carried

thence across the front of the columella transversely to the corresponding point on the opposite side, and down the lateral margin of the other nostril to finish opposite the starting point (Fig. 3). From this incision, dissection is carried forward to the tip of the nose, raising the skin, and over the tip upwards. The skin here is tightly bound down to the nose, and sharp dissection is necessary until one arrives about half an inch above the tip. Thence a narrow tenotome is inserted under the skin as far as the glabella, the skin being raised by a narrow elevator, and by pinching up from outside. With the same knife, and also with a blunt-ended tenotome, the skin is freed on either side of this central passage; the width to which this is carried depends on the amount of depression; there must be no tension in the skin after the graft has been inserted, and any error in this step is likely to be a too sparing rather than a too wide freeing (Fig. 4). This part

FIG. 3.—Line of incision.

FIG. 4.—Area of skin raised.

of the dissection is easily accomplished; but special care is needed in passing from the sides of the nose on to the cheeks, where a region of firm attachment of the skin seems to be the rule. The progress of this, the most important part of the operation, can be watched from outside. During the dissection bleeding is apt to be free. The cavity can be inspected by means of Sir StClair Thomson's speculum or a narrow Killian speculum, inserted at right angles to the usual direction so as to open antero-posteriorly. When a satisfactory cavity has been prepared it is packed to arrest bleeding. A piece of rib cartilage, somewhat larger than seems necessary, is now cut and shaped roughly. The packing is removed and the final fitting and trimming of the cartilage is carried out, the graft being tried in position to ensure accuracy. The tip of the nose, if formerly raised, will be found to be brought down appreciably by this manoeuvre; hence the reason for cutting the graft at first rather large.

In this case the graft was made to take a firm support on the nasal bones, a small notch on the under surface preventing any tendency to ride up. The lower end was brought down quite to the new tip of the nose, and shaped to give a round tip. Three points of horsehair suture closed the incision. Firm pads were applied on either side of the nose to prevent lateral displacement during sleep, etc., but no dressing was used over the tip of the nose.

During the next day it was seen that extravasation of blood extended as far as the globular conjunctiva on either side; the whole nose was oedematous, especially over the formerly most depressed part. Convalescence was uneventful. A slight rise of temperature (to 99.4°) occurred on the second and third days, but there was never any anxiety as to suppuration. The sutures were removed on the fourth day. The result, six months after operation, is seen in Fig. 2. It is remarkable how the whole face is improved; but part of this may be due to relief of nasal obstruction and mouth-breathing. The very slight scar cannot be seen, even if sought for, except when the head is thrown back.

The advantages of this method are:

1. The approach to the part avoids any mucous surface; the operation may be regarded as aseptic.
2. Very wide freeing of the skin of the depressed part is possible.
3. The dissection may be extended as high as is needed; this is specially useful when treating high depressions.
4. It is possible to bring the graft down even below the former tip of the nose; it will not even there rest

against an incision; if necessary, a second graft may be inserted in a channel in the columella, to raise a depressed tip.

5. The graft may be fitted and altered before closing the incision.

6. No scar is made on the front of the face.

On the other hand, the method is not quite so simple as some other procedures; it makes also a certain demand on the patience of the subject. But this last is almost inevitable when dealing with a considerable deformity. *il faut souffrir pour être belle!*

The remaining photographs are other examples of the method. Fig. 5 shows a deformity from falling against a kerbstone seven years earlier; I have, unfortunately, no

FIG. 5.

FIG. 6.

record of the profile deformity, but the full face shows it well. Fig. 6 is the same face in profile, after grafting; it shows how generously one may deal with a large nose. Fig. 7 shows the result of sword cut; it is not quite a true profile, and the sharply angular deformity is minimized.

FIG. 7.

FIG. 8.

In this case the ability freely to separate the skin laterally was very valuable in dealing with the scar. The treatment of the interior of the nose had been a more difficult problem. Fig. 8 shows the result.

Fig. 9 shows a deformity arising from being knocked

FIG. 9.

FIG. 10.

down (and perhaps trodden on) by a cow when the patient was 3 years of age. It is given for contrast with Fig. 10, taken six days after operation. The scar, below the tip of the nose, can just be seen; the marks on the tip are from blood-staining. The gain in intelligent appearance is well shown. (None of the photographs have been retouched.)