the way referred to, and another from my own cases of a like kind, excepting that the patella had not been preserved as in Mr. Lane's case, but in both of which the condyles and articular surfaces were preserved. Fig. 36 shows where the condyles were removed and the covering of the stump was made from the calf; and here is another from the practice of Mr. Henry Smith, of King's College.

As a strong indication of how this operation is estimated by some of the active spirits of the day, I may refer to the opinions of Mr. Butcher of Dublin, who, in his recent work on "Operative and Conservative Surgery," speaks of it with all that enthusiasm which characterizes the writings of that very able and enterprising surgeon.

Lastly, as one of the greatest improvements in modern surgery, let me refer to amputation at the ankle-joint.

It is now about a quarter of a century since Mr. Syme proposed a method of removing a diseased or damaged foot at the ankle, different in all respects from any previous proceeding. His idea was to preserve the ordinary tissue covering the lower surface of the os calcis, so that it might be brought up against the end of the tibia, and leave a pad almost equal to the normal substance, whereby a stump, such as is

FIG. 43.

here represented in Fig. 43, might be retained superior to any that could be procured from the leg, or from any of those flaps which had previously been proposed from the sides or surroundings of the ankle-joint. At this date it is hardly needful to show how this operation has taken with the profession. Like many others in surgery, it has its faults; but, take it with evil and good, I know of no amputation—no style or kind of amputation—which deserves more high consideration. There is everything associated with it to lead to perfection in our modern estimation of such a proceeding: a long stump, and a perfect covering to the end—a covering more perfect than that of any other stump; for the reason that the very bit of soft material on which we naturally stand is still pre-

served for the future basis of this support. Stumps in the upper extremity are put to little trial or strain, as compared with those in the lower; for these are always looked to as supporters of the weight of the body. The soft tissue under the os calcis is the only part of the lower extremity which has been designed by Nature for this purpose; and, with a happy idea, Mr. Syme proposed to reserve this tissue.

The general success of this operation has been highly satisfactory. Evils have followed in various instances; and in what operation, I may ask, do they not? As a whole, looking to the small part of the body necessarily removed, the great length of limb preserved, and the natural character of the end of the stump, I most cordially express my opinion that this is the greatest addition to amputation in modern times.

In saying this I do not overlook the proposal of Pirogoff to retain the end of the os calcis. This (Fig. 38) is a good illustration. I consider the operation of the Russian surgeon a decided improvement on that of Mr. Syme. Yet it is, in my opinion, only a modification, which, even should it ultimately be allowed by all to be an improvement, by no means detracts from the merit of Mr. Syme for reserving a flap from the sole of the foot. The idea—one of the happiest in modern amputations—corresponds with that which I have insisted on as an important feature in amputation of the leg, where a flap or covering for the stump of the thigh is preserved from the leg.

It is not so much my object at present to compare one operation with another, as to mark the modern development of surgery; and if I am not mistaken, this operation may, in regard to amputations, be considered as far ahead of any other in this department, and I therefore refer to it specially as one which pleasingly characterizes the progress of surgery in the present century.

COPAIBA DEPRIVED OF ITS DISAGREEABLE SMELL.

—Copaiba and pitch, of each one ounce; magnesia, a sufficient quantity to make a mass. According to the greater or less amount of magnesia, the mass will be more or less consistent. If the latter, a teaspoonful may be given two or three times a day; if the former, pills may be made. M. Beyran, of Paris, has found this preparation not only effectual, but to prevent none of the usual and very offensive odour of the copaiba.

CURE OF ULCERATION OF THE TONGUE WHICH HAD EXISTED FOR TWENTY YEARS.

By ARTHUR LEARED, M.D., M.R.I.A.,
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A GENTLEMAN sixty-two years of age consulted me last April for a very troublesome sore mouth, as he termed it himself. He came to me under the impression that the affection was caused by indigestion, but his healthy ruddy appearance and the absence of all gastric symptoms prevented my adopting this view. I found the middle of the dorsum of the tongue occupied by a sloughy oval-shaped ulcer, the long diameter of which was that of a shilling. The inside of the mouth and margins of the lips were studded with white aphthous-looking patches, surrounded by deep-red mucous membrane. These sores were a perpetual source of annoyance in eating, and of severe pain if spices or anything of higher temperature than usual was taken. The ulcer on the tongue had existed during the long period of twenty years, and even its shape and appearance had undergone little alteration. But the minor ulcerations, after remaining for some time, would gradually subside. They seemed also to shift from place to place, and sometimes would almost entirely disappear. The patient had had a primary syphilitic sore thirty years before, followed soon after its healing by a secondary eruption, for which he was treated in both instances by a surgeon of great eminence. He has since repeatedly consulted this gentleman about his mouth, but no measures were ever taken except the local application of caustic and of washes.

Partly influenced by the apparent non-syphilitic view of the case, I prescribed chlorate of potash in full doses, with a strong solution of the same for local application. This treatment was persisted in for more than a month without benefit. I now resolved to try the effect of more active agents. Four minims of Fowler's solution of arsenic were ordered to be taken three times a day, and a mercurial bath twice a week; the ulcer of the tongue to be touched daily with nitrate of copper. This treatment was continued for twenty-five days, the dose of arsenical solution having been increased to five minims. It was noted that after the first week the tongue had slightly improved, but further improvement, if any, was very trifling. The baths seemed to have caused a troublesome eruption between the shoulders. Donovan's solution of arsenic, iodine, and mercury was now given in doses of twenty minims twice a day.

On the fourth day of this treatment I had the satisfaction to find that the ulcer on the tongue had broken up into two patches, leaving a sound intervening portion between them. As the medicine purged, a pill containing half a grain of opium was directed to be taken after each dose.

On the tenth day the largest of the ulcers on the tongue was about the size of a split pea. The patient's feet had now become so sore that he could walk only with difficulty; there was a decided inflammatory blush round the heels and balls of the great toes, which were also very tender.

On the twenty-sixth day the tongue had healed, except in a mere point; but the feet were very sore, red, and desquamating; the palms of the hand were also becoming affected. He complained also of an aching in the back of the gums. The dose of the medicine was therefore reduced to one-half. Two days later the tongue and mouth were quite sound, with the exception of some aching in the gums. The medicine was persevered in for some time longer in diminished doses, during which the affection of the extremities gradually disappeared.

About five months after the healing of the ulcer, copper-coloured scaly patches appeared on the lower extremities. These yielded slowly to iodide of potassium with mercurial baths. He is now quite well, and the tongue and mouth have continued sound.

Remarks.—The persistence of an ulcer on so vascular an organ as the tongue for twenty years is of itself remarkable; but its cure illustrates in a signal manner the power of medicine. The most inveterate sceptic could hardly maintain that the cure had been spontaneous, and that the medicines coincidentally taken had been simply inert. Such a case is an answer to those who deny the efficacy of drugs—a thing, let me add, only denied by those who have never given their minds to the study of therapeutics. The employment of arsenic and mercury together was

suggested by a natural anxiety to benefit the patient as speedily as possible; but, in reference to the determination of the separate action of the remedies, would have been better avoided. The skin eruption proved the syphilitic nature of the case, and it is an interesting circumstance that the ulcer seems to have acted as a derivative, since there was no eruption while it existed. Mercury was probably the most effective agent; but there is no reason for supposing that in certain cases of syphilis arsenic is not also highly useful. Experience convinces me of the greater utility of these powerful drugs in some chronic cases than either of them separately. Inflammation of the feet and hands is a singular effect of arsenic, only glanced at in works on therapeutics. Another well-marked instance of it occurred to me some time since in the case of a gentleman, for whom I successfully prescribed Fowler's solution in increasing doses for a refractory form of eczema. His feet were as red and swollen, and walking as much interfered with, as if he suffered from a severe attack of gout.

Old Burlington-street, July, 1865.

ON THE INHALATION OF ATOMIZED FLUIDS.

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THE application of medicaments is effected in a twofold manner—viz., either directly, on being applied immediately to the suffering part; or indirectly, by being received into the circulation of the blood, so that through this agency, which reaches all parts of the body, it may also affect those parts on which we intend to act. Where a direct influence is possible to the physician, he will never think of attempting to reach his aim by circuitous routes. The straight way in medicine is also the best and most effectual, and those branches of our art which could pursue this direct track have enjoyed quick and conspicuous progress. We need only call to our mind surgery, ophthalmology, midwifery, and partly, also, the treatment of skin diseases.

But it is not very long since that even in such cases as catarrh of the conjunctiva, simple ulcers, scabies, &c., very many compound medicines were ordered—a kind of therapeutics which disappeared with the development of local treatment.

Many parts of the body will certainly, by their position, ever exclude a direct proceeding in the manner just spoken of; as, for instance, the basis cranii, the heart, the pancreas, spleen, kidneys, &c., because no natural duct leads us to them. But the natural ways leading to others, which are therefore within our reach, have not been sufficiently appreciated. This was the case with the organs of respiration. The cavum oris and the pharynx were too easily accessible to be overlooked, but the glottis was considered a stoppage for any further advance, the trespassing on which is almost impossible.

One thing remains remarkable. It has always been observed that one of the most important occurrences in life, respiration, proceeds in the most immediate manner; that the inhalation of different gases produces very marked effects upon the organism; and although man was, and usually is, so ready to imitate easily explicable phenomena of Nature, and to use them for his benefit, nevertheless the attempts to gain influence upon the body, and particularly upon the organs of respiration, through breathing an artificially-created atmosphere, were very rare. Hippocrates, who is rightly called "the father of medical science," has not only employed fumigations and inhalations of vapours, but even thus describes* an apparatus, which was superior to many used for such purposes a few years ago:—

"Deinde suffitum illi ex aceto, nitro, origano, et nasturtii semine parato. Quæ leviter trita, pari aquæ mensura ad acetum permixta, et pauco oleo instillato, macerato, postea in ollam infusa, opperculo apposito, arundine cava indita, mox prunis imposita fervefacito, et ubi per arundinis fistulam sursum vapor ascenderit, eum aperto ore intro trahat, ea cautione adhibita, ne fauces adurat. Exteriores vero parte spongias aqua calida imbutas ad genas et maxillas apponat."

The apparatus, therefore, consisted of a pot, the lid of which had an opening for the reception of a reed, through which the

vapour escaped, which was inhaled through the opened mouth; the latter was protected from scalding by moistened sponges. Other Grecian, Roman, and Arabian physicians recommended inhalations, but never attempted to use anything but vapours and fumigations; so that a non-volatile chemical body could not come into contact with the organs of respiration. But at all times the urgent necessity of immediate application of medicaments to the organs of respiration was so much felt, that Mascagni, a very renowned physician, once said, "If ever a specific should be devised against consumption, it would be such as to be introduced into the organism through the windpipe."

Besides this inhalation, some physicians of later date made use of blowing pulverized medicaments into the larynx in diseases of that organ. Aretæus made use of a tube for blowing, which method, in our times, has been renewed with great benefit by Trousseau and other physicians.

In many Continental spas arrangements were made to create an atmosphere suffused with mineral water, which the patient was recommended to inhale. But inasmuch as the mineral water was turned into vapour, it need not be said that the so-called "vaporatoria" or "inhalation saloons" were filled merely with common water vapours.

In 1849, Auphan, of Euzet-les-Bains, originated the idea of atomizing the mineral water, by throwing a jet of the liquid against the wall of the inhalatory. After a short time the same system was adopted in Lamotte-les-Bains. But Sales-Giron first constructed at Pierrefonds an apparatus through which the fluid was subdivided into a fine vapour, which was inhaled by the patients with great benefit. His chief merit consists in his transferring this method from the vaporatory of the spas, to which it was hitherto restricted, into the hands of every physician, by devising a portable inhalation apparatus. Thus a long-cherished wish of the physicians was realized, and from that time a new era in the local therapy of the organs of respiration commences.

This apparatus of Sales-Giron consists of a vessel filled with the fluid which is to be atomized. Above this vessel an air-pump is placed, which compresses the air above the surface of the water. The pressure is indicated by manometre. The water escapes through a fine opening of a tube, and strikes against a small metal disc, where it is turned into very minute vapour, which is inhaled by the patient.

When Sales-Giron placed the results obtained in his vaporatory, and some years later his portable apparatus, before the Académie de Médecine of Paris, great sensation was caused. At first it was questioned whether the atomized fluids reached the larynx, the trachea, and the lungs. Different opinions arose, and various experimenters arrived at different results. Meanwhile the new method gained more partisans. At last the Académie de Médecine took the investigation into their own hands; and on January 7th, 1862, Poggiale, the reporter of the elected committee, in a deeply-interesting, extensive, and brilliant discourse, gave a substantiated statement of the case, based upon experiments. This statement was entirely in favour of the new method; and it was experimentally proved also by other authorities, that not only the vapour, but the chemical bodies which, by being atomized, are incorporated into it, reach not only the trachea, but the cells of the lungs.

Some time after (in 1859), Mathieu constructed an apparatus, which he called nephogène, and exhibited it before the Académie de Médecine. But the greatest simplicity in the construction of the inhalation apparatus was attained by Dr. Bergson. He placed two glass tubes, with very fine openings at one end, at right angles to each other; the other end of one tube dips into a vessel, filled with the fluid which is to be subdivided, while the other is fastened to a caoutchouc tube about a yard in length; the middle and the end extended into a ball, so that the one in the middle represents an air-reservoir, and that of the end a pair of bellows. If the latter are pressed by the hands of the patient, the air in the upper ball is compressed, escapes through the fine opening, and causes a vacuum in the other tube; the fluid of the vessel then ascends through aspiration, and is turned into fine mist when leaving the capillary opening. Upon this principle, which is as excellent as it is simple, Siegle has based his inhalation apparatus, putting aside the bellows, which fatigued the hands of the patient very much, and substituting a vapour kettle, into which one of the tubes descended. The vapour issuing forth effects the same purpose as the bellows, and the patient can inhale comfortably.

At present, this apparatus is the one most used. Its construction is so simple, its application so convenient, and its management so easy, that all "improvements" tried till now have rather spoiled than improved the apparatus.

* Magni Hippocratis Opera Omnia, De Morbis, lib. ii., sect. v. Geneva, 1657.