years of age, was born in England, but went to reside in Bombay when thirty-two years of age. His parents were healthy, and no member of his family had suffered from this disease. During his residence in Bombay, which lasted twenty years, he had very few illnesses of importance, except that he went through a rather severe attack of dysentery about twelve months before the commencement of his present affection. The onset of the leprous neuritis first showed itself in a feeling of numbness and tingling in the left hand and foot in August, 1889, a year before the patient left Bombay for England. Little notice was, however, taken of these sensations, and no medical advice was obtained. Within a few months similar feelings were complained of in the other hand and foot, and a few dull red blotches were observed on the forearm and leg. No actual pain was felt in the limbs, and the muscular power remained good, the patient being able to take prolonged walking exercise without fatigue. During the next three years, whilst living in England, the numbness and tingling gradually increased in all four limbs, and a few nodules appeared on the dorsal surfaces of the hands and feet, and in the lobes of the ears. Throughout the period during which these symptoms were occurring there does not seem to have been any noticeable indisposition or malaise. When the patient first consulted me in July, 1893, the facial aspect was very characteristic, the large size of the ears and the large, flat nose being very striking, especially when the features were compared with photographs taken six and eight years ago, before the onset of the disease. The tint of the skin was everywhere of a dusky, earthy-brown hue, but no skin eruptions, scarring, or pale patches could be seen on the trunk and were only visible on the extremities. The hands and feet were slightly enlarged, smooth, pale, and glistening. The hair was almost entirely absent over the feet and hands, and that which remained was very pale and devoid of pigment. Over the feet and hands there was almost complete loss of sensation to touch, pain, and temperature, and this anæsthesia and analgesia extended some distance up the legs and forearms. Sensation to touch and pain was, however, perfect above the knees and elbows, and no isolated patches of anæsthesia could be detected above the level of these joints. Slight feelings of numbness and "pins and needles" were felt in the feet and hands. The voice was natural and the appetite good.

Present state (June, 1894).—The disease is now in a far more advanced stage. Ulceration has begun in the feet and hands, and is especially noticeable along the ulnar border of the left hand, where there are several small indolent ulcers, which discharge a thin, scanty pus. Under the finger-nail of the ring finger of the left hand a pale mass of granulation tissue forces up the nail. The hands and feet have greatly increased in size, and the soles of the feet are covered with thick white flakes of dried epidermis. Both ears are considerably enlarged, and the nodules in the lobes have broken down and are discharging pus. The voice has become more weak and high-pitched, but his strength is well maintained and his appetite continues to be good. On examination of the chest and abdomen no abnormal physical signs could be detected. The urine is light yellow in colour, slightly acid, of specific gravity 1014, and contains no albumen or sugar.

Nervous system.—No paralysis of any cranial nerve. Sensation to touch, pain, and temperature perfect over head and neck. No anæsthesia to be detected over pharynx, palate, mouth-cavity, or tongue. Senses of smell and taste unimpaired. The optic discs appeared to be normal when examined ophthalmoscopically, and no corneal opacities could be seen. The remarks made with regard to the anæsthesia and analgesia in the upper and lower limbs in July, 1893, still hold good, except that the loss of sensation is now still more profound. The prick of a needle cannot be felt anywhere on the feet, and, except for a few small sensitive patches on the legs, there is almost complete loss of sensation to touch and pain below the knees. One or two small areas of anæsthesia can also be detected on the extensor surfaces of the thighs. In the hands the loss of sensation to touch is almost complete, and the patient experiences great difficulty in feeding himself, owing to his inability to feel accurately any object he grasps. From the same cause also his writing is getting very shaky and bad. Owing to the large size of the feet progression is a little clumsy, but the muscular power remains exceedingly good, and the patient is still able to walk two or three miles a day without much discomfort. Ankle flexion is strong, and the grip of the hands, though interfered with in consequence of their swelling, is fairly good. The deep reflexes seemed

normal on both sides. The external popliteal and ulnar nerves where they become superficial can be well felt on two sides; but they do not seem to be very appreciably thickened, and no nodular infiltrations can be felt on them.

Treatment.—Tonics and chaulmoogra oil combined with good food have been tried, but have not met with much success. Nerve stretching and splitting seem, according to Dr. K. McLeod in a recent paper,¹ in which he sums up the latest results, to be often beneficial. The ulcerations heal, and the general atrophic condition of the limbs at all events becomes temporarily ameliorated, the explanation being that the leucocytes thrown out by the operation cause a disappearance of the infiltrating growth.

Remarks.—As is so commonly the case, no cause can be found for the onset of the disease. I could obtain no evidence whatever regarding the possibility of contagion, and it does not seem that the patient was accustomed to indulge largely in a fish diet. The attack of dysentery was perhaps a predisposing cause. It will be seen that in this case the macular and nodular eruptions have not been prominent features, and that the nervous symptoms greatly predominate. Removal to England from India does not seem to have had any effect in retarding the progress of the disease. It is remarkable what a profound sensory disturbance exists with such a very small deficiency on the motor side. This may, perhaps, be accounted for either by supposing that the disease first starts around the fine ramifications of the sensory nerves to the skin, and thence spreads up the nerve trunks, or that the fibres transmitting efferent impressions in the mixed nerve trunks show greater resistance to the infiltrating growth. Finally, the last noticeable feature which strikes one in this very distressing case is the extensive ulceration of the skin of the left hand in the region supplied by the cutaneous branches of the ulnar nerve.

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A NOTE ON THE TREATMENT OF TERTIARY ULCERS OF THE PHARYNX BY THE TOPICAL APPLICATION OF SULPHATE OF COPPER.

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THE following five cases, which occurred in the clinic of Dr. de Havilland Hall in the throat department of Westminster Hospital, illustrate very well the excellent results to be obtained by the application of sulphate of copper of the strength of twenty grains to the ounce to bad tertiary syphilitic ulcers of the pharynx. There is nothing new in this method of treatment, for it was much recommended and extensively used by the late Sir Morell Mackenzie years ago; but, having found it so much more efficacious than other forms of treatment, such as the application of tincture of iodine, nitrate of silver, and acid nitrate or cyanide of mercury recommended by some authorities, I have thought it worth while recording the results obtained by it in five bad cases that I have lately come across in Dr. de Havilland Hall's throat department. Some authorities—e.g., Mr. Lennox Browne²—advise the use of the galvano-cautery and state that by its application these tertiary deep ulcers heal very rapidly and show no tendency to recurrence. In my own experience I have seen equally good results from the application of sulphate of copper, and to the majority of practitioners this method will, I think, recommend itself more particularly, because the galvano-cautery can only be available to the few.

The tertiary ulcers found in the pharynx are generally of two kinds—viz., (1) superficial, and (2) deep perforating. The superficial are most frequently located on the palate, less often on the pillars of the fauces and the tonsils; they extend with great rapidity and, like other tertiary ulcerations, are often serpiginous; their base is pale and smooth, with fungous-looking granulations. The deep or perforating ulcers are usually due to the breaking down of gummata, and, as

¹ Proceedings of the Royal Medical and Chirurgical Society; THE LANCET, Feb. 17th, 1894.

² Diseases of the Throat and Nose, p. 207.

Lancereaux says, "they gain in depth what they lose in extent." In a case I saw some little time ago the bodies of the vertebrae, covered only by the anterior common ligament, were exposed, and in this case the ulcer extended further than is usual—i.e., down to the level of the epiglottis and up to almost the top of the pharynx. The late Sir Morell Mackenzie³ mentioned a case that was under his care where the patient had a deep ulcer on the posterior wall of the pharynx and on the right side, lost more than a quart of blood, and shortly afterwards expectorated the transverse process of the second cervical vertebra, the hæmorrhage, in his opinion, probably coming from the vertebral artery.

The deep ulcers are often in an early stage almost painless, but later, when the ulceration extends in depth, they cause much pain and may seriously interfere with deglutition. Unless they are treated promptly and appropriately very serious consequences may result, such as contractions, adhesions of the soft palate to the pharynx, &c., hæmorrhage, and malnutrition from painful deglutition. It is essential that both the constitutional and the local treatment be continued until every vestige of the disease has disappeared. Iodide of potassium should be given in doses beginning at five grains three times a day and increased up to thirty or forty grains daily, and should be continued for some time after the healing of the ulcers. It is best given well diluted with water and in conjunction with quinine.

Locally it is of great importance to thoroughly cleanse the ulcers before applying the astringent, and the routine used is: (1) to thoroughly spray the foul surface and surroundings of the ulcer with an alkaline solution and then to wipe it as clean as possible with pledgets of wool on holders; (2) to paint the affected part with a solution of cocaine of the strength of twenty grains to the ounce; and (3) to thoroughly paint the ulcer with a brush dipped in the solution of copper sulphate, twenty grains to one ounce. The patient is ordered some simple gargle, as gargarismus boracis, to cleanse his pharynx out with, and the treatment is renewed daily or every other day. It is astonishing how quickly the ulceration ceases, the surface and surroundings of the ulcer losing their angry look and the foul discharge ceasing, and in a few days healing is well advanced.

If it is a matter of inconvenience to the patient to see his medical adviser daily, he can easily be taught how to use the sulphate of copper himself, taking care that he be instructed to thoroughly cleanse the surface of the ulcer and to paint it with cocaine before applying the astringent. One of the disadvantages in the use of the galvano-cautery in these cases is that the surgeon has to apply it himself daily, often a matter of difficulty for the patient to arrange for.

For permission to use these notes I have to thank Dr. de Havilland Hall.

CASE 1.—A man aged twenty-seven first attended as an out-patient at Westminster Hospital on Oct. 12th, 1893. Four years ago he noticed a disagreeable thick discharge from both anterior nares; this got worse, but he neglected it till twelve months ago, when he attended as an out-patient and got much better. Then he left off treatment for a time, but two months ago the discharge returned, being worse than before. There was a distinct history of syphilis. On examination, large masses of crusts were seen in the nares; the septum was perforated, and there was ulceration of a superficial character on the fauces. He was treated with iodide of potassium and locally with collunarium sodii, and got so much better that he did not trouble to come again after Dec. 7th. On May 3rd, 1894, he came back again with a large, very deep ulcer in the posterior wall of the pharynx, which was covered with foul, yellowish sloughs; all the septum nasi was destroyed, and the ulceration actively extending. The surface of the ulcer was sprayed with alkaline solution, painted with cocaine, and then sulphate of copper was applied thoroughly. Iodide of potassium and boracic gargle were ordered. This treatment was repeated on May 8th, when the ulcer was found to be much improved. On the 10th the ulcer was quite clean and healthy, and rapidly healing. Sulphate of copper was again applied.

CASE 2.—A woman aged twenty-eight attended as an out-patient in October, 1893, for syphilitic disease of the throat. Nearly the whole of the soft palate was occupied with a deep, irregular ulcer with undermined edges and covered with a dirty, tenacious, yellowish slough; this caused no pain. There were one or two small ulcers on the posterior wall of the pharynx as well. The ulcers were treated in

the same way with sulphate of copper, and in ten days had quite healed up, leaving, however, a great deal of deformity and contraction.

CASE 3.—A man aged forty attended as an out-patient on Jan. 11th, 1894, for sore throat and an ulcer on his tongue; six years ago he had a chancre, followed by rash, sore throat, &c., and he had been under treatment at various times for it. During the last month he had been troubled with ulceration of the tongue and pharynx. On examination of his tongue a large, deep, irregular foul ulcer was seen occupying the greater part of the anterior third of the organ; the surface of the ulcer was covered with a dirty slough, and the edges were rather heaped up and inflamed; there were no enlarged glands and very little pain. A small superficial ulcer occupied the posterior wall of the pharynx. Both ulcers were thoroughly cleansed, cocainised, and painted with sulphate of copper. By the commencement of February both ulcers had healed completely.

CASE 4.—A woman thirty-two years of age attended as an out-patient on Feb. 1st, 1894. There was a history of syphilis seven years ago. Ulceration of the throat was first noticed two years ago and since then she had had trouble of the same sort frequently. On examination a large, deeply excavated, dirty ulcer was seen occupying the soft palate, and the pillars of the fauces were much swollen. She was ordered quinine and iodide of potassium, and the ulcer was cleansed and treated with sulphate of copper. She was shown how to use the astringent herself, and by the beginning of March the ulcer had healed, leaving, however, a good deal of contraction and some adhesion between the soft palate and the pharynx.

CASE 5.—A woman aged thirty-one attended as an out-patient on Feb. 22nd, 1894. There was a history of sore-throat three years ago. The patient got better, then one year ago got worse again, and has been under treatment for it every now and then for the last four or five months. There was difficulty in swallowing from pain, and she complained of nasal obstruction. On examination a very extensive and very deep tertiary ulcer of the posterior wall of the pharynx and the soft palate was seen; the surface was very foul and covered with a slough like wet chamois leather; the patient's general health was very bad. Fifteen grains of iodide of potassium three times a day were ordered, and the ulcers were treated in the same way as the other cases. A boracic gargle was ordered as a mouth wash. On Feb. 26th the treatment was repeated; the ulcers were much cleaner. On March 8th the ulcers were nearly healed, and the general health was much improved, but there were extensive adhesions between the soft palate and the pharynx, partially cutting off the naso-pharynx from the oro-pharynx.

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THE FORMATION OF A SUPRA-PUBIC URETHRA.

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THE formation of a permanent supra-pubic channel leading from the bladder is an old and well-known means for evading the ills attendant upon advanced urethral obstruction. In many instances it affords almost the only prospect of relief; the attempts, however, that have hitherto been made to place the opening under the patient's control have not met with an equal degree of success. Whether formed by puncture or by formal cystotomy, the channel is only a sinus leading obliquely downwards into the bladder, lined by granulation tissue and constantly tending to contract. To ensure comfort a costly apparatus requiring perpetual attention must be worn night and day. A simple tube provided with a stopcock may answer for a time; but, though leakage around it can be prevented by adopting Professor Wiley Broome's suggestion of cutting a screw thread on its outer surface, the diminution in the carrying capacity of the bladder that follows cannot. A rubber appliance with a portable urinal strapped on to the leg may suffice for an old man in the last stage of enlargement of the prostate, leading an almost sedentary life; in the case of a younger one it is a serious hindrance, and in many instances the knowledge that something of the kind

³ Transactions of the Pathological Society, vol. xx., p. 283.