healthy joints which had been confined for months came out undamaged from months of continuously enforced rest. Yet there is one of his observations which does bear on the utility of movement in preventing ankylosis. He remarks on the rarity of ankylosis in the joints between ribs and spine. They are joints at which movements go on unceasingly throughout life. But he refused to associate their freedom from disease and from ankylosis with their inability to assume a position of continuous rest.

If Hilton's first service to surgery was to give "rest" a foremost place in the means of treatment, his second service was to give "pain" its rightful place in the means of diagnosis. He was a teleologist; he regarded the human body as a specially designed machine provided with a sense of pain to serve as a signal of disease.

I conceive that pains situated on the surface of the body, and associated with some abnormal state of an internal viscus, must be looked on as a beneficent provision, enabling us by external pain to receive the information and to appreciate slight organic changes or derangement of function of the internal viscera.

That statement of Hilton's was particularly directed against those who hide their ignorance by tracing all obscure pains to rheumatism and gout. In his opinion, pain was provided by Nature to guide the surgeon to the seat of disease; a knowledge of the distribution of nerves and the manner in which the nerve system acted was the means by which the surgeon was to obtain a correct diagnosis. Pain was a demand for rest. He made certain observations which throw some light on the production of pain. In a case where the ulcerated articular surface of the astragalus was exposed, he made his pupils note that when he merely touched the ulcerated area the patient felt nothing, but when he pressed it there was pain. Pressure gave pain; rest relieved it. In another case, one of necrosis of the tibia, he showed how pressure on the artery above the seat of disease diminished pain, while pressure on the veins increased it. Pressure within the capillaries caused increase of pain.

I should give a very imperfect picture of the foundation of Hilton's methods of treatment were I to omit his inquiries into pathological conditions. I need only cite two cases to show you that he sought in every case, before commencing treatment, to realize the exact nature of the deeply seated lesion; he never allowed an opportunity to escape which would yield him information. The first case I shall cite is this:

A young gentleman, 18 years of age, living in Islington. On a Sunday evening, returning from chapel, wearing a very narrow high-heeled boot, walking at the edge of the pavement, his left foot turned inwards with a sudden jerk, and he exclaimed to his sister, who was with him: "Oh! I have twisted my foot; I never had such a dreadful wrench before." I saw him on the following Sunday with Dr. Billingham, and I then came to the conclusion that he had sustained some injury to the lower epiphysis of the tibia, for, upon close examination, I found the ankle-joint free from mischief. Hilton advised rest. Some days later, when he was visiting patients in the city, he learnt by accident that the young man was dead. He set out for Islington. "The hearse was at the door, so that I had only time to unscrew the coffin and examine the leg. I took away the bit of tibia; it fairly rewarded me for the trouble. There was a laceration between the shaft of the tibia and its lower epiphysis—precisely the spot where the boy had the first sense of pain on the Sunday morning."

Hilton thus provides us with an everlasting example of the manner in which surgery is made into a rational art. The second case I am to cite is equally instructive.

A man, going across Blackheath rather the worse for liquor, fell down or jumped six or eight feet into a gravel pit, and, alighting on his feet, his leg was very severely broken. I amputated the leg below the knee. On examining the ankle-joint, which had apparently not been injured, I found the articular cartilage upon the astragalus actually depressed at one part, and at another I saw within it a large black, deep patch.

This patch Hilton cut out and brought to my predecessor at this College—Mr. Quekett—who cut microscopical sections of it, and found that it was due to an extravasation of blood beneath the articular cartilage. In this instance Hilton provided us with a kind of observation of which we still stand much in need—the lesions of joints which we classify under the generic term of "sprain."

GASTRO-INTESTINAL SEPSIS A CAUSE OF MÉNIÈRE'S SYMPTOMS.*

BY

T. MARK HOVELL, F.R.C.S. EDIN.

SINCE Ménière's paper dealing with a set of symptoms produced by hæmorrhage into the labyrinth, and consequently producing an incurable form of deafness, was published on February 9th, 1861, this set of symptoms, with which his name has been associated, has conveyed to the medical profession at large the idea of a condition of the ear for the relief of which little can be done.

Although aural surgeons of late years have clearly drawn the distinction between Ménière's disease, or the class of cases to which Ménière referred in his paper, occurring suddenly in patients without previous ear trouble, and Ménière's symptom complex occurring in patients suffering from an affection of the middle ear—which condition for many years I have preferred to call by the simpler term of Ménière's symptoms—the distinction is not as yet universally understood in the profession, and there is in consequence a tendency, except with aurists, for any patient suffering from the group of symptoms which Ménière described to be regarded as having an incurable ear disease, so that palliative treatment is all that is possible.

It is not my intention now to deal with the cases in which the symptoms are produced by syringing the ear when perforation of the drumhead exists, or by quickly rotating the patient, or to an extension of suppuration to the labyrinth, or are found in the course of an acute disease from inflammation or infective processes extending to it, or with the attacks of giddiness and tinnitus which occur sometimes as part of the vasomotor disturbances which accompany the menopause, or any of the cases in which the cause is obvious, but to confine myself to those which occur in patients suffering from middle-ear disease and come on without the reason being apparent.

Having noticed a similarity in the general condition of patients who become affected in this way, I began to pay close attention to the matter, and found that the treatment adopted not only greatly diminished the frequency and severity of the attacks, but in some cases practically freed the patients from this distressing condition.

Many of the patients I have seen had the following conditions present at the first visit: A furred tongue, congested pharynx, nasopharyngeal catarrh, hypertrophic rhinitis, flatulence frequently causing a considerable amount of distension, and constipation, although sometimes the motions were broken and light coloured. Several patients have told me that previous to an attack the motions have been noticed to be especially offensive.

With these symptoms it did not surprise me to find often, although not invariably, the blood pressure high, for toxæmia due to intestinal sepsis is a common cause of increased blood pressure, and as might be expected some dilatation of the heart often existed, although this symptom was not always present. It is not customary habitually to examine the size of the heart by gently percussing the chest wall whilst a stethoscope is held against it; if this were done the transition of sound from clear to more dull, indicating that the cardiac area has been reached, could easily be appreciated, and dilatation would be found to be far more often present than is now generally supposed.

Although I have only mentioned toxæmia due to intestinal sepsis, oral sepsis due to pyorrhoea, decayed teeth, crowns, or bridges must not be overlooked, or any other condition which might tend to produce this result.

With the patient in the state which I have described, it is not surprising that closure of the Eustachian tubes is usually present when Ménière's symptoms exist, for gastro-intestinal derangement is a common cause of congestion of the pharynx and nasopharyngeal catarrh and consequent closure and catarrh of the Eustachian tubes. Nor is it to be wondered that tinnitus and giddiness are found when toxæmia is present, these symptoms being more the result of this condition than caused by high blood pressure when it exists.

* A paper read before the Otological Section of the Royal Society of Medicine, November, 1917.

With the condition I have described present it is obvious that in many instances it would add materially to the comfort and well-being of the patient if the set of symptoms known as Ménière's were to convey in the first instance the impression of the existence of gastro-intestinal derangement rather than as at present an incurable condition of the ear; for with the former basis thoughts would travel to gastro-intestinal antiseptics, medicines for reducing blood pressure and correcting digestive derangement, and as to the advisability or otherwise as a preliminary measure of washing out the stomach with an alkaline solution in the usual manner by means of a funnel attached to a flexible rubber tube. In some cases I have had a specimen obtained from the stomach during fasting and a vaccine prepared and administered as an adjunct to other treatment.

With regard to blood pressure, I may mention in passing that a solution of adrenalin chloride taken internally is by many supposed to increase blood pressure, but in reality a small dose reduces it, and three to five drops with a little dilute hydrochloric acid, appropriately flavoured, makes a pleasant and useful mixture; but no medicine given with the object of reducing blood pressure will yield satisfactory results unless the intestinal tract is restored to a healthy condition, and as a first step to medicinal treatment I am in favour of a full dose of castor oil.

Although the removal of the cause is essential for the successful treatment of the case, local measures also give material relief; the most important of these is to restore the patency of the Eustachian tubes. In many instances the mere injection of air into the tympanum lessens the distressing symptoms, but I find that for permanently restoring the patency of the Eustachian tubes the injection into them through a catheter of a few drops of collosol argentum is often shortly followed by a beneficial result. The nozzle of the syringe which injects the drug into the catheter must not fit the catheter tightly, or the drug might be forced directly into the Eustachian tube instead of being sent into it in the form of a spray by air pumped from an air-bag, the nozzle of which closely fits the catheter. To lessen the nasopharyngeal catarrh, collosol argentum or collosol iodine is useful, sprayed directly backwards through the nostrils by an all glass or vulcanite spray producer so that it reaches the nasopharynx and the orifices of the Eustachian tubes.

The injection of a few drops of collosol argentum, or in some cases of collosol iodine, into the Eustachian tubes with the object of restoring their patency, is useful not only to patients suffering with Ménière's symptoms but also in closure of the tubes to Valsalva's inflation due to any cause. I have seen many instances in which this treatment greatly relieved or removed tinnitus when closure of the tubes existed, although the patient may have been suffering from incurable deafness due to sclerosis or other conditions. Whether in this case the tinnitus is due to a congestion produced by long-continued closure of the tubes, and the mere restoration of the patency by removing this causes the tinnitus to subside, or whether it is due to the tissues being affected by the drug, I am unable to say. This simple method of removing the tinnitus, often of old standing, which is frequently the patient's chief trouble, is worth remembering, as tinnitus has always been a difficult symptom to get rid of; even the more troublesome treatment by ionic medication, when it gives relief, is not always followed by complete cessation.

I have found collosol argentum also useful for stopping earache, and usually apply it for this purpose by placing the patient with the meatus of the affected ear upwards and then filling it with the drug and allowing it to remain there. Collosol iodine or collosol mercury should not, I have been told, be given in conjunction with arsenic, as mercurial poisoning or iodism respectively quickly follows. I have had no personal experience of the result of these drugs being administered together or in close succession.

AN institute for soldiers blinded in the war was recently opened at Salerno. Its establishment is due to the initiative of Professor Carlo Carucci, director of the local technical school. There was no ceremony, but an interesting feature of the occasion was a musical performance by Professor Marinuzzi, who is himself blind.

THE PARAFFIN TREATMENT OF BURNS.

BY

LIEUT.-COLONEL ALFRED J. HULL, F.R.C.S.,
ROYAL ARMY MEDICAL CORPS.

THE introduction of new non-irritating antiseptics has led to several modifications in the paraffin treatment of burns.

Various preparations of paraffin have been made under my direction, containing acriflavine, brilliant green, chloramine-T, etc., dissolved in the paraffin base. These preparations have been given a very extensive trial. Another direction in which the new antiseptics have given scope for improvement has been the treatment of the burn by an antiseptic before the application of the paraffin. The results following this modification have been so satisfactory that we have adopted it as a routine method.

The method of application of the paraffin base is the same in all cases. The burn is first of all washed with normal saline (1 in 1,000 acriflavine solution or proflavine has now been substituted). The burn is dried with gauze or an electric drier. A layer of paraffin is painted over the burn. The paraffin is applied at a temperature of about 55° to 60° C. A thin layer of wool is placed over the first layer of paraffin and a second layer of paraffin at the same temperature painted over the wool. A dressing of wool and bandage is applied over the paraffin dressing. The dressing is changed every twenty-four hours. It is important to paint or spray on a sufficiently thick layer of paraffin. If the temperature of the paraffin is too high, the layer is liable to be too thin. The efficacy of this treatment depends largely upon the mechanical effect of the paraffin. The epithelium is conserved from damage; the tissues are held at rest by a splint-like action of the dressing. The addition of antiseptics to the paraffin preparation gave better results than preparations without antiseptics. The first antiseptic to be extensively used was eucalyptus oil, which, in conjunction with beta-naphthol, is still used in No. 7 paraffin. Scarlet-red paraffin has given satisfactory results in general use, and has special indications for its use which makes it a preparation of value. Burns which have been treated with No. 7 paraffin occasionally become sluggish and present unhealthy granulations. We have therefore changed the paraffin to scarlet-red paraffin when burns have become clean and shown a tendency to begin to heal. This treatment has resulted in great acceleration of healing. We have made many experiments with a view to improving the paraffin base, but no preparation has given such good results as No. 7 paraffin. Later a flavine paraffin has been extensively used, and has given satisfactory results. Paraffin preparations of brilliant green and chloramine-T have not been satisfactory from a pharmaceutical point of view, the antiseptics being difficult to incorporate in the paraffin.

Various paraffins of varying degree of melting point have been tried, but the use of paraffin of intermediate melting point does not produce so good a mechanical base as No. 7 paraffin. The dilution of a high melting point wax with vaseline and oil appears to have some special value in the treatment of granulating surfaces, and makes a better mechanical mixture. The question as to whether special paraffins (scarlet-red, acriflavine, chloramine-T) possess any particular value has been debated. It would appear that since the antiseptic can be painted on the burn before the application of the paraffin, the use of special paraffin is somewhat unnecessary. The results of acriflavine applied in the form of solution followed by the application of No. 7 paraffin have been so good that we have practically discarded the use of special preparations with the exception of acriflavine paraffin and scarlet-red.

The effect upon recovery of the application of various antiseptic solutions previous to the application of the paraffin has been studied.

Eusol accelerated the cleaning of the burn but was too irritating in its action.

Brilliant green cleaned the burns well, but if used beyond a certain stage caused light-coloured and unhealthy granulations.

Acriflavine cleans the surfaces well; whether better than brilliant green or not is doubtful, but it certainly produces a healthier type of granulation.

Scarlet-red is only used when the burns are clean and