

the head is bent forward. There is thus produced an intermittent and rhythmical grimace, which is very singular. If, at the moment when this grimace is made, you ask the patient to put out her tongue, and to make it project from her mouth, you will notice that the point of the organ is carried very strongly to the right. Involuntary movements of the tongue in this same direction are produced in the mouth every moment; and, as they coincide with the deviation of the labial commissure, considerable difficulty in pronunciation is the result. The words are cut and divided, and altered by a sort of babyish imperfection, which is strongly marked. *Chau-chou* is pronounced instead of *hausson*; *chan-chou* instead of *chanson*.

We shall now, to finish this descriptive study from Nature, ask the patient to rise; the involuntary movements are quite as pronounced in the vertical position as they were in the horizontal. The young patient cannot hold herself upright without the assistance of her left arm, which she rests on the bed; with the help of another person, she can take a few steps forward; she then advances with a rhythmical balancing of the body, a cadenced movement of the limbs of the right side, which reminds one fairly of the dance called "mazurka". Such at least is the opinion expressed by some who are competent in such matters.

You have seen enough, gentlemen, to be led to recognise the affection which you have under your eyes as one which might be called a chorea, provided always that we take this word in its largest acceptation; so that, for example, it serves to designate affections of diverse nature where there exist gesticulations, involuntary movements of wide range, permanent movements, incessant, persistent, without lapse or truce—except, however, during the period of sleep. For this is not a case, as becomes evident from the first glance, of ordinary chorea (chorea minor, Sydenham's chorea), such as you may observe in another patient (A.), whom I have placed alongside of the first in order to better mark the contrast. In A., the involuntary movements belong to the classic type, and consist, consequently, in gesticulations which are not rhythmical, truly disorderly, and hardly describable, or which, at least, cannot be expressed by anything like a precise formula. In the young G., on the contrary, the chorea—which in this particular case is a hemichorea, since the movements of the limbs at least are limited to one side of the body—the chorea is of the kind which my colleague Professor Sée, in an important work which you know well, has proposed to designate under the name of systematic or rhythmic. (See *Mémoires de l'Académie de Médecine*, p. 95.) These qualifications, observe, are perfectly applied to our case. In our patient, indeed, the chorea may be called rhythmic, since the pathological movements affect a very regular rhythm. It may also be called systematic, since the movements in each period of the rhythm are reproduced according to a constant and uniform type.

We might seek to give still more precision to our terms, and to show that the pathological movements which we are studying should be referred to the variety of chorea called *malleatory*. Properly speaking, "malleatory" signifies that the gesticulations are comparable to those of the arm of the smith who strikes upon the anvil (*malleator*). But the action of striking upon the anvil is not the only one which may be imitated in this kind of chorea. If we were to persist in seeking terms of comparison in the exercise of certain physiological or professional acts, we might, looking at the movements of the arm and right leg, describe the chorea in G. as *natatory*; or it might be more naturally called *saltatory*, if we considered, on the other hand, more particularly what occurs when the patient is erect and endeavours to take some steps, and, as she goes along, performs a sort of dance.

But these shades of difference have little real importance. It will suffice, in order to characterise the situation, to point out that, in a general way, the involuntary acts in question reproduce, more or less accurately, certain intentional voluntary acts.

[To be continued.]

THYMOL AS A REMEDY IN SKIN-DISEASES.

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TEN years ago, a paper was sent to the Pharmaceutical Society by a M. Bouillon, a French chemist, advocating thymol as a substitute for carbolic acid (*Pharmaceutical Journal*, January 1869). Since that time until lately, this substance has attracted but little attention in England; but in Germany, several have worked at it, among whom may be especially mentioned Volkmann, who has used it in antiseptic dressings, after Lister's method, instead of carbolic acid spray; and Bucholtz of Dorpat, who has made experiments upon its power of preventing or destroying living organisms in fluids, in comparison with

other antiseptics. In this country, however, it has been recently brought into general notice, mainly by the lectures of Dr. Burdon Sanderson at the London University "On the Infective Processes of Disease"; and as I have been employing it for the last five months in several skin-affections, it will be opportune to relate my experience of it. I was first shown this substance by Mr. Martindale of New Cavendish Street, who was selling it, dissolved in vaseline, chiefly as a lubricant for the finger in obstetric and similar examinations. Finding that its properties were similar to those of carbolic acid in some respects, I thought it would be useful as a stimulant application in skin-diseases, and so far it has certainly exceeded my expectations.

As when prescribing it I am constantly asked what is thymol, and the information regarding it is scattered through many publications, it may be well to give a short account of it. It is obtained from the essential oil of thyme, which is found in several plants—*Thymus vulgaris*, *Thymus serpyllum*, *Mentha sylvestris*, and *Ptychotis ajowan*, the last a very common plant in India, which would probably be the main source if much demand arose for it. Oil of thyme consists of two bodies; one a liquid hydrocarbon, thymene, and the other oxidised, thymol (C₁₀H₁₄O). It is placed by chemists in the camphor group, and is homologous to phenol, forming thymolates and sulpho-thymolates with alkalis. As imported into this country, it is a white solid, crystallising in oblique rhombic prisms, though from weak solutions it may be obtained in the form of needles, with the odour of oil of thyme, and is obtained in the solid form by freezing the essential oil or by distillation; but when made by acting on the oil with caustic alkali, with which it combines, and separating it from the alkali by an acid, it occurs as a liquid which cannot be made to crystallise. In water it is only permanently soluble about one part in a thousand, but readily soluble in alcohol, ether, glacial acetic acid, vaseline, and fatty substances generally. Still better as solvents, both on account of the quantity taken up and because so dissolved it can be diluted to any required extent, are the caustic alkalis, thymolates being formed, I believe.

As I wished to use it in the form of lotion as well as ointment, Mr. Gerrard, the dispenser of University College Hospital, undertook to work out the pharmacy of it. The results, of which I have availed myself in prescribing, are as follows. Five grains of thymol dissolved in an ounce of rectified spirit will not be precipitated on the addition of an equal bulk of water; but some will be thrown out when diluted to four ounces to be redissolved when the proportion of six ounces of water to one ounce of spirit is reached. In the proportion of two grains to the ounce of spirit, it is miscible with water in any proportion. A solution of seven grains of caustic potash in a drachm and a half of water will take up fifteen grains of thymol. A solution of ten grains of caustic soda in a drachm of water takes up thirty grains of thymol. Glycerine only increases the solubility in water very slightly. Further details may be found in Mr. Gerrard's paper in the *Pharmaceutical Journal*.

As an outcome of the above, I have used the following formulæ.

1. An ointment, consisting of one ounce of vaseline and from five to thirty grains of thymol; the thymol being dissolved in the vaseline.
2. A lotion, consisting of thymol, five grains; rectified spirit and glycerine, each one ounce; water, sufficient for eight ounces. The glycerine is added to correct the desiccating effect of the spirit alone.
3. A solution of five to eighty grains of thymolate of potash* in eight ounces of water.

As yet, I have not had occasion to use stronger lotions than the above. I have only lately used the last lotion; but so far, have found it equally efficacious, while it has the advantages of economy and the readiness with which the strength may be increased. Ointments made with lard instead of vaseline act very well, but vaseline ointments have a better appearance. The disease in which I first prescribed it and have had the greatest success is psoriasis.

In my early cases, I used the ointment of a strength of twenty-five grains to the ounce, to be rubbed into the seat of eruption after the removal of the scales, night and morning; but I soon found that it was a powerful stimulant, and that 5 per cent. was too strong for many cases; and here I must dissent from Husemann (quoted in the *Year-Book of Pharmacy* for 1876, p. 283), who has made some physiological experiments with this drug. He says: "It produces no irritation on the skin, but it does on the lips". In a concentrated form I have found it even caustic in its effects. In a case where the ointment had been carelessly dispensed, so that crystals were present undissolved in the vaseline, minute holes in the skin were produced in those parts

* Since writing the above, Mr. Gerrard has found that the alkali merely dissolves the thymol, and that when the vaseline ointment is stronger than twenty grains to the ounce, the thymol should be first dissolved in alcohol, in the proportion of one minim to the grain.

where the crystals had remained some time. The discrepancy arises from the insolubility of the drug in water; when quite dry, Husemann is perhaps correct, but, in the presence of a solvent like vaseline or the alkaline saliva on the lips, its irritant effects are apparent. To return to the psoriasis, I found it better to begin with a weaker ointment, namely, ten grains to the ounce; and then, if the remedy were suitable, to continue as long as improvement was manifested, and if it became stationary, to increase the strength by five grains to the ounce until, in some cases, thirty grains to the ounce was reached. In the majority of cases, the weaker ointment was sufficient to cure the case; and another advantage is that it can be more continuously applied than the stronger forms, a method to be preferred, as a rule, to intermittent applications. Many cases treated with thymol showed rapid improvement, and some very chronic cases, which had resisted other treatment, including tarry applications, improved and were finally cured by it.

If the disease were limited or nearly so to its usual situations on the extensor surfaces of the forearms and legs, I usually ordered the ointment; but when the diseased surface was of considerable extent, a lotion was prescribed to be applied with soft rag several times a-day, lotions being generally more convenient in the daytime to people following their usual avocations. In some people it produces tingling and occasionally smarting when first applied, but this only lasts a few minutes. Like all stimulant remedies, it does not suit every case, and must not be applied, or at least very dilute, when, on removing the scales, the parts are much hotter to the touch than the surrounding skin and very red; in short, whenever the hyperæmia is considerable. This must be first subdued by soothing astringent measures externally, and appropriate internal medication, and then thymol applications will materially hasten the cure. In fact, it is most successful in that class of cases in which tar is usually prescribed, and while quite as efficacious and in some cases succeeding where tar fails, it is cleaner, colourless, and hence can be used on the face without producing the brown discolouration of oil of cade and other preparations of tar, while the odour is rather pleasant than otherwise.

In the later stages of eczema it is also extremely useful; some cases of very long standing, which had been submitted to other treatment of various kinds, rapidly yielded to thymol. It was necessary in eczema to use a weaker ointment of only three to five grains to the ounce; and I have not met with any case of eczema that required a stronger application than that, and unctuous are generally better than watery applications in this disease.

As might be anticipated, it is adapted to a smaller proportion of cases than psoriasis, and must be restricted to cases in the dry stage or where the amount of discharge is diminishing, *i.e.*, not until the activity of the inflammation has subsided; hence it happens that even in the same patient it would cure one part, and be too stimulating for another part where the inflammation was still active. If, however, due discrimination be employed, the duration of the disease may be much curtailed. Smarting when first put on is rather more frequent than in psoriasis. With similar precautions, it also rapidly completes the cure in so-called lichen agrius; but usually a preliminary soothing treatment is required for some time before thymol is prescribed.

Lewin and Bucholtz have shown that thymol is about eight times as powerful as carbolic acid as a destroyer of the lower forms of life, and hence its usefulness in vegetable parasitic diseases was suggested. Accordingly, I have treated cases of tinea versicolor, tinea tonsurans, and tinea circinata. In the last two I have not yet used it sufficiently to warrant an opinion as to its merits, but in tinea versicolor I have used an ointment of ten grains to the ounce and the thymolate of potash lotion of ten grains to eight ounces. The ointment was effectual, but slow in its action; but the lotion cured cases where a large surface was affected in a few days. I cannot, however, claim for it any great advantage over sulphurous acid and the hyposulphites. I may also mention, for what it is worth, that a case of lichen planus which has lasted five years, after a fortnight's treatment with thymolate of potash, shows more improvement than I have ever seen in so short a time; the itching is gone, and the eruption is less prominent.

I think we may conclude from the above facts that thymol is a valuable addition to the list of stimulant remedies for diseases of the skin, and probably also as a parasiticide for diseases of fungous origin; but, like all stimulants, it must not be used wherever there is much hyperæmia, as it will be more likely to aggravate than benefit such active cases; judiciously employed, however, it gives results which cannot fail to be gratifying to prescriber and patient, while its pleasant appearance and odour, as compared with preparations of tar, with the avoidance of the discoloration of the hair and skin produced by chrysothanic acid, are not the least of its claims to attention.

Other therapeutic uses to which it has been put are, as a caustic to the exposed pulp of carious teeth, for which it is much used by French

dentists, and as an inhalation in throat-affections; but I do not know how far it has been advantageous. I am not aware of its having been given internally, but Husemann is quoted in the *Year-Book of Pharmacy* for 1876 as having injected two grammes (thirty grains) under the skin of a rabbit weighing one kilogramme, the only effect being a slight decrease in the number of respirations and temperature and a slight increase of pulse, but probably the greater part was not absorbed. The urine was turbid, had a smell of peppermint, and contained blood-corpuses and albumen. *Post mortem* there was marked accumulation of fat in the liver, and the kidneys were inflamed. The symptoms of poisoning by it were great irregularity of breathing and paralysis setting in gradually. The heart continued to beat after all other action had ceased. So far, that would not appear to promise much from its internal administration. Its great pungency also would be an obstacle to its being given by the mouth.

FRACTURE OF FEMUR SUCCESSFULLY TREATED BY ELASTIC PERINEAL BAND.

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On June 26th, 1876, I was sent for hurriedly to see Miss J., aged 13, who, I was informed, had sustained a severe injury in the right leg in the following manner. She was running across the park, when her foot slipped into a hole that was concealed by the long grass, and she was thrown forcibly upon her right side. When lifted up, she was unable to stand, as there was complete loss of power over the right lower limb. Upon examination, the limb was found to be an inch and a half shorter than the other, and a fracture of the shaft of the femur at the upper portion could be easily detected, both by crepitus and from the extreme mobility and deformity of the lower portion of the injured limb. The foot was slightly inverted. As the patient suffered considerable pain upon any movement, she was placed under chloroform, the fractured portions brought into position, and a well-padded Liston's splint applied. The perineal pad now applied was prepared with some care, an India-rubber air-cushion being inserted, to alleviate pressure upon the perinæum. There was a considerable amount of muscular spasm, with occasional jerking. As the limb was in good position, and of the same length as the other, the appliances were not disturbed. A sedative draught was ordered for the night. Sleep was frequently disturbed by the spasmodic jerking of the limb. The perineal pad had stretched, and the limb was found an inch shorter than the other in the morning. I now found that I must overcome the muscular spasm and provide constant equable extension to keep the fractured bones in apposition. As I was not able to apply a weight and pulley, from the peculiar construction of the bedstead, I decided upon using an elastic perineal band; and, after searching for some time, found what exactly suited my purpose. This consisted in a manufactured material sold in the shops as garter-elastic: it is about an inch in width; and, by employing it in layers, the necessary amount of extension power can be obtained. Two layers of this elastic I found, by a spring-balance, to exert extension force equal to that of a weight of seven pounds, which was quite sufficient for my purpose. I prepared a perineal band in the following manner. Two layers of elastic, eighteen inches in length, were covered by a sheath of soft chamois leather. Broad linen tapes were stitched to the end of the elastic, leaving the sheath free for it to move in. I had my former appliances removed, and, keeping up extension by assistance, applied a bandage evenly and firmly from the toes to the upper portion of the thigh. This very much relieved the muscular spasm. The long padded splint was then adjusted, the ankle-joint being carefully protected by cotton. The elastic perineal band was then applied well extended; this suited admirably in keeping up constant equable extension; from its narrow width, it did not interfere with the use of the bed-pan. If, at any time, pressure were complained of, by inserting the hand, and drawing down the elastic band, a soft silk pocket-handkerchief or other material could be placed between the band and the part pressed upon. Thus, in no way was constant extension interfered with. An air-cushion well inflated was placed under the sacrum. On the tenth day, some pain was experienced in the knee- and ankle-joints; and, fearing that the extension was being carried too far, I reduced it one-half, or to three and a half pounds. This last band was kept on for three weeks without any inconvenience. In the sixth week, all appliances were removed. There was no shortening of the limb, but some stiffness remained in the ankle-joint. The patient was now allowed to sit up daily, and after a few weeks she went into the country, returning here again for Christmas. I had an opportunity of