

up in cotton-wool, and a moderate opiate be administered in a glass of brandy-and-water in strength proportioned to the age and habits of the patient, with the object of counteracting the sense of chilliness that will otherwise necessarily follow in all these cases, I think you will find you have made a good start in the future management of your case. In all cases, whether of burn or scald of the external skin, I say, resort to local stimulants. The soft and soothing system, I believe, answers no useful purpose whatever beyond that of excluding air, if that be, as supposed, a great desideratum.

I prefer the solution of nitrate of silver to the turpentine of Dr. Kentish, because it can be made of variable strength to suit each individual case, and the relief it affords after its first application is yet more complete than that afforded by the latter remedy. The theory of the excellent results of the treatment of burns by provocatives, or remedies that provoke physical pain, is not very clear. It would appear that relief invariably follows a temporary increase of pain; but one is inclined to ask whether the benefit consists in the actual presence of pain, and how far the same agency—whether of fire, hot water, turpentine, or the nitrate-of-silver lotion—would be equally beneficial when the subject of the injury was placed under the influence of chloroform. This question I must refer to others more fortunate than I in having at their command a larger field of inquiry than now falls to my lot.

My advice to you is, to abjure carron oil and all demulcents, and to adopt the treatment of burns and scalds by local stimuli.

### DIGITALIS IN DELIRIUM TREMENS :

FIVE CASES SUCCESSFULLY TREATED BY HALF-OUNCE DOSES OF THE TINCTURE ; WITH REMARKS.

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THE LANCET of June 4th contains an account of a case of delirium tremens successfully treated by large doses of digitalis. The publication of that case, together with those recently published by my friend Mr. Nankivell, has induced me to recount my experience of the drug in similar instances. I may premise that four of my patients had one dose only; but that, it is right to add, consisted of half an ounce of the tincture of the London Pharmacopœia. The other patient had, first half an ounce, and then, after the lapse of some hours, two drachms.

CASE 1.—The first case treated with what may be regarded as an heroic dose was that of a woman, aged about forty, who was engaged in the kitchen of a large institution where she had ample opportunity of obtaining stimulants. When she first became delirious, a full dose of opium was given by the surgeon in attendance, and was repeated some three or four times. In spite of this, however, she became so excited that it was thought desirable to send her to the insane ward, where, shortly after her admission, two drachms of tincture of opium were administered. No improvement followed the exhibition of this large dose, and the gentleman in attendance gave up all hope of saving his patient. At my suggestion, half an ounce of tincture of digitalis was administered. I watched the effect of this, and observed that twenty minutes after its exhibition the patient fell asleep. She slept for several hours consecutively. On awaking, as she was still somewhat delirious, though much less excited, I thought it desirable to give her two drachms more of the tincture. After this no further treatment was required, and the woman quickly resumed her duties.

CASE 2.—The next case that came under my notice was that of a potman, aged thirty-five, whose symptoms for the first two days of the attack were so like those of enteric fever that it was not without some difficulty that I made a correct diagnosis. Parenthetically I may observe that, probably, had the clinical thermometer then been in use, the difficulty I experienced would not have arisen. Moderate doses of opium did no good, nor did like doses of tincture of

digitalis. The patient became so much worse that I determined upon giving him half an ounce of tincture of digitalis. My notes state that "he was asleep within ten minutes of taking the dose; slept for four hours; then was awake for half an hour; and then slept again for two hours, making six in all." This was the first sleep he had had for nearly a week. He was well in a day or two.

CASE 3.—The subject of this case was a grocer aged about twenty-six, who, having inherited a considerable sum of money, was unwise enough to indulge in repeated debauches of a serious character. I learned from his wife that he had previously had at least one severe attack of delirium tremens. When I saw this patient he was in a state of high delirium and very troublesome. I need not detail the treatment adopted; suffice it to say that, in spite of opium, antimony, henbane, oxide of zinc, cannabis indica, &c., he did not improve; indeed his condition became really alarming. Half an ounce of tincture of digitalis now appeared to me to be the only remedy likely to benefit the patient, and accordingly I gave him that dose. I should here state that up to the moment of giving the tincture the pulse was rapid and of an irritable character. The heart seemed to me to beat much too often and to do but little real work; and this I believe was actually the case, for in a very few minutes after administering the drug I noticed that, whilst the pulse, which I closely watched, had fallen in frequency, it had increased considerably in volume, and this at the time to me somewhat alarming change was exactly coincident with the supervention of sleep, which occurred in less than twenty minutes after the exhibition of the remedy. This one dose cured the patient of that attack, and for some time he remained well and temperate. At last, however, he again broke out, and I attended him once more in a similar attack, which will be detailed under the heading of Case 5, as I prefer to relate the cases in the order in which they occurred.

CASE 4.—In this instance, the patient, a young gentleman aged twenty-one, who had forfeited an excellent Government appointment through drunkenness, was furiously delirious. Neither opium nor morphia had any good effect upon him, and it was only after their failure that I ventured upon giving a large dose of digitalis. In this case, as in the last, I closely watched the effect of the drug upon the pulse, and with precisely similar results: it fell in frequency, while it gained in force and volume. The patient was asleep within a quarter of an hour of taking the medicine, slept for ten hours consecutively, and on awaking felt and remained perfectly well. This patient died a year afterwards of phthisis, induced undoubtedly by drink and debauchery.

CASE 5.—This case occurred in the person of Case 3, and is peculiarly interesting on the following account:—

Dr. Russell Reynolds, whom I had acquainted with the success I had met with in the foregoing cases, suggested that possibly the good effect of the half-ounce of tincture of digitalis might be owing to the alcohol it contained, and not to the digitalis; and he recommended that, if I had an opportunity of doing so, it would be well to try the effect of half an ounce of proof spirit. Dr. Reynolds, also, suggested that, if I found it necessary to resort to digitalis, it would be desirable to give a watery infusion of the drug, using a dose of it equal in strength to half an ounce of the tincture. It so happened that, shortly after this conversation, Case 3 again came under my care, with another severe attack of delirium tremens. I felt it to be my duty to give him the benefit of ordinary treatment at the outset, as I had done in the first attack for which I attended him; but the result was equally unsatisfactory, and, ultimately, I judged it to be necessary to give him digitalis again. But before doing so I determined to put into practice Dr. Reynolds's suggestion. I accordingly gave half an ounce of proof spirit; and although for a considerable time I carefully watched the patient after its administration, I could detect no change whatever either in the pulse, respiration, or mental condition. Finding the result of this experiment to be purely negative, I resorted to the half-ounce dose of tincture of digitalis, as I found a difficulty in procuring good digitalis leaves wherewith to make a watery infusion. This, happily, acted as efficiently as a like dose had done on the first occasion; and the phenomena observed after its administration were of precisely the same character—that is to say, the pulse fell in frequency while it gained in volume

and strength, the breathing became more tranquil, and the patient fell asleep within twenty minutes of taking the drug. After some hours' sleep he awoke cured.

*Remarks.*—No bad or dangerous effects were observed in either of the cases narrated, although, I confess, that the marked decrease in the frequency of the pulse at first made me uneasy; and, had I not recognised that, while it fell in frequency, it gained remarkably both in force and in volume, I should have been alarmed.

It will be observed that my patients were young, or comparatively young, persons; for I am averse to treating the aged by means of large doses of digitalis, being, in truth, as it were instinctively, afraid to do so. And, even in the young, I was and still am loth to resort to so powerful, not to say dangerous, a remedy without, in the first instance, having given the patient the benefit of what is regarded as more orthodox treatment, which, undoubtedly, succeeds in the majority of cases. In endeavouring to analyse the reasons which influenced me in giving these large doses to young, or comparatively young, patients (for age should not be measured by years alone), and withholding them from others, I made out the process of reasoning to be somewhat as follows; and I venture, although with some diffidence, to mention it, because I believe it to have served me in good stead.

There is unquestionably a great disturbance of the vascular system in delirium tremens. Whether arterial tension be lessened or increased need not now be discussed: this much we may safely assume, that there is a considerable departure from the normal standard, and as long as that departure is maintained there is delirium. It is well known that digitalis exerts a very powerful influence over the heart and the whole vascular system. Its precise *modus operandi* is perhaps beside the object of this paper, but I cannot forbear remarking that probably the following explanation is very near the truth. It is admitted on all hands that digitalis retards the action of the heart, and by most observers that it materially increases the tone of that organ. Now, retardation of the heart's contractions gives more time for the auricles to unload themselves into the ventricles, and in this way venous stasis may be lessened; while, from the increased force with which the ventricles, especially the left, contract, the arterial and capillary circulation may be improved. But, whatever may be the condition of the vascular system in a given case of delirium tremens at the moment of exhibiting a large dose of digitalis, it is thereby altered. It is this sudden alteration which I think unquestionably takes place that, in my judgment, makes large doses of digitalis dangerous; for whether arterial tension be increased or diminished, the alteration is so sudden that unless the vessels be sound and elastic they cannot quickly enough accommodate themselves to the change, and hence, I believe, the danger. It is clear that those persons whose arteries have become inelastic from degeneration cannot safely bear sudden changes in the tension of their vascular system; and, *à fortiori*, those in whom this degeneration (or "rottenness," as Sir Wm. Jenner aptly expresses it) has gone on to any great extent are in the greater danger, and that for two reasons—first, because the rotten spots may give way if the tension be suddenly increased; and secondly, because the rigid arterial tubes cannot contract upon, and accommodate themselves to, the lessened volume of blood if it be suddenly diminished. This, I believe, will explain why *large* doses of digitalis are so dangerous to the aged. *Small* doses, I need hardly say, are invaluable in the treatment of the cardiac affections of old people; and it may be that their cautious use may prove beneficial in the treatment of delirium tremens occurring in persons of advanced years.

Queen Anne-street, Cavendish-square, June, 1870.

DR. WHITMORE, the medical officer of health for Marylebone, has just made his annual report, which states that there were 169 more deaths during the year than in the previous one. The causes of the increase were attributable partly to an unusual mortality from diseases of the lungs, and partly to the epidemic outbreak of scarlet fever, which towards the close of the year was exceeding fatal. The birth-rate was equal to that of the previous year. Small-pox was fatal in 4 cases; the average number of deaths for the last fourteen years was 24. Diarrhoea had destroyed 176 lives, which is below the average.

## FURTHER EVIDENCE REGARDING THE EFFECTS OF THE ANTISEPTIC SYSTEM OF TREATMENT UPON THE SALUBRITY OF A SURGICAL HOSPITAL.

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IN the early part of this year a paper was published in THE LANCET,\* in which I recorded the general results of my practice in the Glasgow Infirmary during three years in which the antiseptic system of treatment had been carried out, as compared with my previous experience in the same institution with ordinary management of the cases. It was there shown that the strict enforcement of the antiseptic principle had been accompanied by a most striking change in the salubrity of the wards under my care, which had been converted from some of the most unhealthy in the kingdom into models of healthiness; and I ventured, in conclusion, to make the following remark:—"Considering the circumstances of those wards, it seems hardly too much to expect that the same beneficent change which passed over them will take place in all surgical hospitals when the principle shall be similarly recognised and acted on by the profession generally." I have now the pleasure of announcing an instance of the fulfilment of this anticipation, as related in the following letter from Dr. Saxtorph, Professor of Clinical Surgery in the University of Copenhagen.

"My dear Sir,—It is now nearly a year since I left Glasgow, where I had the opportunity of seeing how the antiseptic treatment of wounds is to be carried out. Every surgeon who has seen the remarkable results of this treatment must feel it his duty to imitate you, and dress the wounds after your principles. I therefore, as soon as I came home, adopted your method, and have used it now continually since that time; and I am happy to say that, although I have not generally succeeded in obtaining complete primary union, except in smaller wounds, still the treatment has proved in other respects extremely satisfactory. The hospital to which I am appointed head surgeon (the Frederik's Hospital), is a very old building—in fact, it is now much more than a hundred years old,—and it contains about 350 medical and surgical beds. In the surgical wards I have room for about 150 patients; but the usual number during the winter has varied from 100 to 130. Formerly there used to be every year several cases of death caused by hospital diseases, especially by pyæmia; sometimes arising from the most trivial injuries. Now, I have had the satisfaction that not a single case of pyæmia has occurred since I came home last year, which result is certainly owing to the introduction of your antiseptic treatment. But it must be clear to any surgeon who has adopted your method that unless you take the greatest precautions in *every* dressing till the wound is either healed or filled up with granulations, you will never see the excellent effects of this treatment. It certainly takes much longer time, and demands much greater precautions, than any other dressing; but the reward is certain, and it is a great satisfaction to know that the good result of many operations almost entirely depends upon your dressing of the wound. As an instance of this I may mention the following case:—A man came to me with a foreign body in the left knee. I thought it to be, not a loose cartilage, but a fragment of the tibia, loosened by the kick of a horse eight years ago. It was situated behind the ligamentum patellæ, was a little movable, and grated very distinctly as two osseous surfaces would do. I made a large incision on the outer side of the capsule and tried to extract it, but the surfaces were so much entangled in each other that I was obliged to use my finger and different hooks and forceps before I got it out. The operation lasted certainly a quarter of an hour, and during the whole time I poured a stream of carbolic solution over the wound. Having extracted it at last, it proved to be really a part of the head of the tibia with its cartilaginous surface on it, and of the size of a small walnut. I treated antiseptically, and the wound closed without any suppuration in the joint. All

\* THE LANCET, Jan. 1, p. 4; and Jan. 8, p. 40.