

tropical climates. Common inflammations of the lungs are not less rare in the tropics; and thus one source of the disease is not so frequently present; whilst in the cold regions where these affections are rife, phthisis is comparatively rare and much less virulent. It affords also no explanation of the influence upon such infection of damp subsoils, nor yet of the improvement in the phthisis rate which has been shown to follow thorough drainage of a town.

To account for these several points it is necessary to assume the existence of some condition accessory to infection by the bacillus, which shall either enable it to live longer outside the body or which may even increase its power of attack. It may, indeed, be sufficient to account for the facts if we assume the first of these hypotheses to be true, and if it could be proved that a hot climate and a damp soil gave a longer term of life to the bacilli contained in foul and dusty air; but I am inclined to think that something more than this is necessary to account for the difference of the intensity of bacillary infection in pure air and in that reeking with organic vapours, and have therefore ventured to suggest that the tubercle bacillus, like some other infective microzymes, may actually take up an increase of virulence by a sojourn for a time in some medium external to the body; contact with a certain kind of organic matter may assist sporulation. It has struck me that a fresh infection of the lung in persons already suffering from phthisis is much more likely to take place from without than from within the body; many times I have seen in-patients with sputum teeming with bacilli improve in health, gain in weight, and almost lose the physical signs of their disease, and then they have returned home, and in a few weeks they have come back to the hospital, sometimes with fresh disease in the damaged lung, sometimes in the opposite lung that had been previously healthy, and sometimes with laryngeal phthisis. Such facts as these certainly seem to show that there was something in the air of their own homes much more infective than the bacilli of which they were themselves the hosts. The one fact that might seem to bear against this theory is the high temperature required for the development of the organism, but it is by no means proved that in cold climates the bacilli contained in damp and foul dwellings may not in some way increase their power for evil.

ON THE

THERAPEUTICAL USES AND TOXIC EFFECTS OF CANNABIS INDICA.

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THE letter of "W. W.," in THE LANCET of March 15th, induces me to submit this communication on the therapeutical value of Indian hemp and the circumstances which have led to its having obtained a somewhat questionable character in our Pharmacopœia.

In 1848 Dr. C. J. B. Williams, in his lectures on medicine in University College, spoke of this drug as one from which he, after using it in many cases, had expected much, but it was so uncertain in its action, and its exhibition was sometimes accompanied by such distressing toxic effects that he had discontinued its use, and advised his pupils to do the same. Some seven years after this Mr. Peter Squire, the most distinguished pharmacist of the time, informed me that for at least three years he had been unable to obtain a good specimen of any preparation of the drug from India, or even to obtain the plant; strange things had been sent him, and other plants, but the former were bad, and the plants were not even of the same genus. However, he had recently been successful in obtaining the plant and in making an alcoholic extract and a tincture, with which he hoped I would make experiments. To this request I very readily acceded, and have made very numerous observations of its action from that time until now; and with this general result, that Indian hemp, when pure and administered carefully, is one of the most valuable medicines we possess.

In order to furnish the results to which I have been led by more than thirty years' experience of the drug, it will be well to arrange the maladies in which it has been either useful, or useless in the order to be followed in this paper; then to speak of its "uncertainty" of action, and of the methods to be adopted in order to avoid its toxic effects.

First, some of its most markedly valuable results are to be found in curious conditions of mind:—

1. *Mental*.—In senile insomnia, with wandering; where an elderly person, probably with brain-softening, in the "delirium form" (Durand-Fardel) is fidgety at night, goes to bed, gets up again, and fusses over his clothes and his drawers; thinks that he has some appointment to keep, and must dress himself and go out to keep it; but may be quite rational during the day, with its stimuli and real occupations. In this class of case I have found nothing comparable in utility to a moderate dose of Indian hemp—viz., one-quarter to one-third of a grain of the extract, given at bedtime. It has been absolutely successful for months, and indeed years, without any increase of the dose. In alcoholic delirium it is very uncertain; but has very occasionally been useful. In melancholia it is sometimes of service in converting the depression into exaltation; but I have long since discontinued its use, except when the case has merged into that of senile degeneration. In mania I have found it worse than useless, whether that malady has been chronic or acute. In the occasional night restlessness of patients with "general paralysis," and in those of "temper disease" (Marshall Hall), whether in children or adults, it has proved of eminent utility.

2. *Sensorial*.—In almost all painful maladies I have found Indian hemp by far the most useful of drugs; and it is especially so in those cases which are, to the present time, relegated to the "functional" order. Neuralgia, periodic or not, has often yielded to cannabis indica—pure and simple, no other treatment being given,—after ten, fifteen, or twenty years' duration. This result has been obtained most frequently in facial pain. In one case (University College Hospital) a man, with neuralgia of the lower branches of the nerve, had lost two stone in weight during four years, from inability to take food, except by fits and starts; his pain had been present for eighteen years, and had resisted every kind of treatment that had been adopted, but was relieved completely after two days of hemp treatment, and the trouble never returned. Very many like cases, of varying duration, have been found equally amenable to treatment. Neuritis: Indian hemp here is only useful in conjunction with other treatment, but it is a most valuable adjunct to mercury, iodine, or other drugs; as it is in neuralgia when given together with, when required, arsenic, quinine, or iron. Migraine: Very many victims of this malady have for years kept their sufferings in abeyance by taking hemp at the moment of threatening, or onset of the attack.

I have found Indian hemp almost useless in sciatica, and in myodynia, whether in the neck, the thorax (pleurodynia), or the back (lumbago, sacralgia). The pains that occur only on movement do not, so far as my experience extends, receive any relief from its administration; and I say this after having tried it in full doses in very many cases and during many years. Again, it has proved, in my experience, useless in cases of gastrodynia, enteralgia, tinnitus aurium, muscæ volitantes, and almost all the so-called "hysterical pains"; whereas, on the other hand, it has relieved the lightning pains of the ataxic patient, and also the multi-form miseries of tingling, formication, numbness, and other paræsthesiæ so common in the limbs of gouty people.

3. *Muscular*.—In clonic spasms, whether of epileptoid or choreoid type, I have found hemp very useful. For example, in the eclampsia of children, or of adults, whether from worms, teething—first or second dentition, or the cutting of the wisdom teeth—in a very large number of cases I have relied, and successfully, upon it alone. In true, chronic epilepsy I have found it absolutely useless, and this as the result of very extensive experience. There are many cases of so-called epilepsy in adults, but which, in my opinion, are either eclamptic, or the result of organic disease of a gross character in the nervous centres, in which Indian hemp is the most useful agent with which I am acquainted. Such cases, for instance, as attacks of violent convulsions (epileptoid in every actually present symptom) in an overfed man, who has had a heavy supper, and is attacked two or three hours afterwards while asleep, and whose attacks may recur two or three times in the hour, for a day or two, in spite of "clearing the *primæ viæ*," bromine, and other drugs, but whose fits may be stopped at once by a full dose of hemp.

Again, there are cases of brain tumour or other malady in the course of which there occur a series of epileptiform convulsions, followed by coma, and coma by delirium,

at first quiet and then violent, the delirium time after time passing into a renewed convulsion and repetition of events; and this may go on for hours, or even days, in spite of any other treatment, and yet yield at once to Indian hemp. Further, with regard to genuine epilepsy and allied affections, I have found this, that Indian hemp has been, on the one hand, useful only in those cases where the diagnosis has led me away from a belief in the presence of the really classical disease, to the suspicion of organic lesion or of eccentric irritation; and, on the other hand, entirely useless, when there is no doubt of the nature of the malady. In many cases of genuine epilepsy, where attacks of petit mal are exclusively present and very frequent, and have been so for years, I have given Indian hemp in gradually increasing doses until some slight toxic effect is produced; but have never found it to reduce either the frequency or severity of the seizures, or to materially affect their character. In tonic spasm, such as torticollis and the like, in writer's cramp, in general chorea, in paralysis agitans, in the jerking movements of spinal sclerosis, in trismus, and in tetanus, Indian hemp has proved in my experience absolutely useless; but at the same time it is a most valuable medicine in the nocturnal cramps of old and gouty people; it in some cases relieves spasmodic asthma, and is of great service in cases of simple spasmodic dysmenorrhœa.

Second, in explaining the occasional toxic effects of Indian hemp, two things must be remembered:—

1. That the drug is one which, by its nature and the forms of its administration, is liable to great variations in strength. For practical purposes, its active principle has not been separated, and extracts, as well as tinctures made from the extract or from the plant, cannot be made uniform; because the hemp grown during different seasons, and in different places, varies in the amount that it contains of the therapeutic agent. It is desirable, therefore, that it should always be obtained from the same source, and that a minimum dose should be given to begin with, and that the dose should be very gradually and cautiously increased.

2. That individuals differ widely in their relations to many medicines and articles of diet, and perhaps to none more widely than to those of vegetable origin—such as tea, coffee, ipecacuanha, digitalis, nux vomica, and the like; and therefore, in addition to securing purity of drug, the possibility of idiosyncrasy should be borne in mind, to emphasise the need of caution, in the first administration of Indian hemp. By habituation and gradual increase of the dose, two, three, or even four grains of the extract may be taken not only with impunity, but with advantage; but such a dose as one grain would, so far as my experience goes, be attended with toxic effects in the majority of healthy adults. I have seen them in mild form from one-third of a grain, and very rarely from one-fourth, but have never known them arise from one-fifth. Therefore, for an adult I always give one-fifth or less to commence with, and for a child one-tenth. The best, because most convenient, form for administration is the tincture. Pills often become hard and insoluble, and their strength cannot be so readily and so gradually increased. The tincture, if suspended by mucilage, is apt to separate in the mixture that contains it, and thus the doses become uneven. Therefore, during many years I have given it with instructions that the dose required should be taken in drops on a small piece of sugar or bread. The tincture of the Pharmacopœia contains one grain in about twenty minims, and this is convenient for use with children; but for the adult, where a gradually increasing dose is required, a tincture with a strength of one grain in ten drops is more useful. The doses should be given in minimum quantity, repeated in not less than four or six hours, and gradually increased by one drop every third or fourth day, until either relief is obtained, or the drug is proved, in such case, to be useless. With these precautions I have never met with any toxic effects, and have rarely failed to find, after a comparatively short time, either the value or the uselessness of the drug.

It is no surprise to me that "W. W." should have suffered as he did, and which he so accurately and graphically describes, from the dose that he had taken; nor does it astonish me that his friend, possessed of a different idiosyncrasy, could have taken it with impunity; and the object of this communication will be attained if, by giving my experience of the great value of Indian hemp, my brethren may be deterred from abandoning its use by any dread of its causing "toxic effects," unless it be given in a "toxic" dose.

RETROVERSION OF THE GRAVID UTERUS; DEATH FROM RUPTURE OF THE BLADDER AND PERITONITIS.

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I VENTURE to lay the following notes before a section of the readers of THE LANCET, believing that they will prove of interest to many young practitioners whose attention may not have been directed to a mode of death which occasionally supervenes in the course of pregnancy. The case is one to which I was called in consultation by a medical friend a few miles from Newcastle. The patient died about two hours before I reached the farmhouse which she and her husband had occupied.

Mrs. C. H—, aged thirty-six, a delicate woman and the mother of four children, took ill on the 27th of June, her complaint being vomiting accompanied by pain in the abdomen. She was seen during the course of the day by her medical attendant, to whom was given the history of a five months' pregnancy, and by whom the ordinary medicines used in these cases to allay sickness were ordered. On the following day her condition was worse; the patient looked ill, the vomiting and pain in the abdomen had not been relieved, the abdomen was distended more than the asserted period of pregnancy accounted for, and it was more generally tympanitic. The diagnosis was peritonitis complicating pregnancy; and although the illness was regarded as grave by her medical attendant, it did not suggest itself to him as one likely to terminate fatally on the following day. The 29th of June found her in a condition worse than ever. For the first time he now learned that no urine had been passed for more than twenty-four hours. Thinking that the pain in the abdomen might be associated with the processes of labour he made a vaginal examination, but failed to find the os uteri. The patient was now in a state of collapse, and was evidently dying from peritonitis, the cause of which was obscure.

Although the patient was dead when I reached the house, the doctor was very anxious that I should make a vaginal examination, in order to appreciate the difficulty he had experienced in trying to reach the "os." Cadaveric rigidity had already set in. There was considerable difficulty to the passage of the finger into the vagina, owing to the fact that the posterior wall was nearly driven out of the vulva, the cause of the displacement being a soft cyst lying behind it. The finger gliding in in front of this passed at once up behind the pubis, but no "os" could be felt. It was quite clear that the cyst-like body was part of a displaced pregnant uterus, the "os" of which had been lifted upwards and carried high above the pubis. Consent to a post-mortem examination was readily obtained, and this we made on the following day.

On opening the abdomen there escaped a quantity of thick brownish fluid, which smelt strongly of putrefying urine. About a pint and a half of this fluid was afterwards found in the abdominal cavity. When the walls of the abdomen were reflected, there was brought into view a bluish-red surface extending from the pubis up to the level of the umbilicus. It looked at first as if it was the outer surface of a distended pregnant uterus. It was at places firmly adherent to the abdominal parietes and intestines. This turned out to be the outer surface of an elongated, flattened, and ulcerated bladder, from which, by enlarging one of its perforations, I removed several ounces of the thick brown foul-smelling urine already described. Posteriorly the elongated and flattened bladder was firmly adherent to a large cyst-like body, the size of a child's head, which, passing downwards and backwards, occupied nearly the whole of the pelvis, and, continuing downwards into the vagina, had thrust before it the posterior wall of that passage. With considerable difficulty I raised this, and found it to be an enlarged pregnant uterus containing a five months' foetus. How, then, are we to account for all this? The bladder had towards its fundus formed adhesions with the intestines and abdominal walls. On cutting into it, its walls were found to be extremely thick at some places, and remarkably thin at others; especially was this the case towards the fundus anteriorly, where there was an area about an inch and a half square, extremely attenuated, perforated, and sloughing. The intestines were generally