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I.

ON THE TREATMENT OF HOOPING COUGH.

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In the treatment of hooping cough, Cullen's method of dividing the disease into three distinct classes is highly judicious ; each stage being marked with its characteristic features, which distinguish it from the others, and each requiring a distinct plan of treatment.

In the *first stage*, the treatment must be regulated by the type of the fever. Thus, although bleeding is proper when the excitement is considerable, or when the pulse is hard, small, and quick, and the breathing oppressed, indicating congestion, yet, as it is an acknowledged maxim that the symptoms of spasmodic affections are rather increased than diminished by the use of the lancet, it would be highly injudicious to bleed, unless such symptoms as have been just described clearly point out the necessity of abstracting a portion of the circulating mass. In my own practice, I have seldom had occasion to employ bloodletting; but in some of the cases in which it has been requisite, the necessity was not limited to the commencement of the disease ; and in one distressing case for which I was consulted some weeks since, bleeding, although it

did not save the patient, yet greatly soothed his sufferings, and rendered the closing hours of life comparatively comfortable.

Nothing is so likely to produce that state which requires the use of the lancet in hooping cough, as the imprudent exposure of the patient to sudden alternations of temperature ; and therefore, when we consider also how much milder the disease is in warm climates, the propriety of confining those laboring under it to one or two apartments, kept at a medium temperature, must be obvious. The custom of frequently changing the air was founded upon an erroneous view of the disease, and is now, I believe, rarely recommended until the disease has nearly run its course, when the change, operating as a tonic power, rapidly annihilates the cough, which sometimes continues, from the force of habit, in persons of weakened and irritable constitutions.

The early employment and repetition of emetics in hooping cough, is a judicious remnant of the old humeral practice in this stage of the disease. In infants, emetics free the stomach not only of the mucus from the trachea and bronchia, which is brought up in coughing and immediately swallowed by very young patients, but also, in those more advanced in years, they dislodge from it that preter-

natural secretion of mucus, which has been already mentioned as occurring in this organ ; for it is a well-known fact, that, through the connexion of the stomach and the larynx by means of the par vagum, nauseating medicines, rousing the stomach to discharge its contents by vomiting, loosen the adhesion of viscid mucus to the lining membrane of the larynx and trachea. Emetics also determine powerfully to the surface; and when the paroxysms of coughing assume an intermittent character, which is not unfrequently the case, the administration of an emetic at the moment when a paroxysm is expected, breaks the periodic habit, and facilitates the cure of the disease, on the same principle as in ague. I have, nevertheless, seen much mischief result from the frequent repetition of emetics in those of delicate and irritable habits ; and when the stomach and the chest consent, if the expression be allowable, and the paroxysms are terminated by vomiting, the exhibition of emetics is not only unnecessary, but highly detrimental.

Practitioners are divided in opinion with respect to the kind of emetic which should be employed. Some imagine that by the employment of squills and other nauseating expectorants, as emetics, a double indication is effected ; but as the operation of all expectorants is through the stomach, on which they must produce nausea before the air-tubes can be relieved by them, those emetic substances are the best which are most easily limited in their effects ; and consequently ipecacuanha, combined with small doses of tartar emetic, is preferable to every other emetic.

The promotion of expectoration is undoubtedly useful in this stage

of hooping cough ; but, in very young subjects, it can prove beneficial only when accompanied with vomiting ; and, as emetics are not always advisable, other methods have been sought for, to promote this effect. Among these, I have seen the inhalation of both highly-diluted nitrous acid gas, and of the vapor of hot tar, tried with apparent benefit. The former was first tried by Mr. Patterson, surgeon to the Ferton Hospital, and is noticed in Dr. Carmichael Smyth's Report upon Nitrous Acid Gas ; but the cases were too few to form a decided opinion of its powers ; and in my own practice, I have seen it used once only : in that instance the patient rapidly improved. Mr. Patterson employed it under the supposition that it might neutralize the virus in the air-passages of the lungs, and thence render it inert, in the same manner in which it destroys contagious matter floating in the atmosphere : I used it with the hope of exciting the lungs to discharge the mucus with which, in the case referred to, they were completely choked up. It certainly produced the desired effect ; and after the employment of it for three successive days, the most striking improvement took place in the patient, who previously appeared to be sinking into his grave. I have had no other occasion for using the nitrous acid gas in hooping cough, but I feel much disposed to recommend it in similar cases. I have employed more frequently the inhalation of the vapor of tar, in less urgent cases, and can bear testimony to its effects in promoting the expulsion of the glairy mucus from the trachea. I may here mention that I have lately found it equally useful in a very distressing case of asthma. The simplest

method of extracting tar vapor is to put the tar in a pipkin capable of holding triple the quantity intended to be used, and placing this in a vessel containing sand sufficiently heated to keep the tar in a state of gentle ebullition: it promotes expectoration, which is followed by sleep, from which the patient awakes greatly refreshed.

In this stage of hooping cough, when the excretions are not duly effected, it is necessary to resort to purgatives; but I must agree with Dr. Cullen in condemning their frequent employment.

In the second stage of hooping cough, which may be regarded as commenced when the febrile symptoms have abated, and the cough returns in regular paroxysms, such as in the cases now under treatment in this Dispensary, the symptoms are to be combated by those medicines which, having sedative powers, allay the morbid irritability of the nervous system, and, consequently, act as antispasmodics. This class of remedies is extremely extensive; and the greater number of the articles which it contains have been, at one period or another, employed in hooping cough; and although each has had its advocates for a certain time, yet many of them, either from the influence of fashion, which has a sway even over medical opinions, or from a conviction of their inutility, have fallen into disuse. The list is still sufficiently extensive; but I will notice those only of which I am able to speak from my own experience and observation.

The first of the tribe of narcotics, opium, has been extensively employed, but has generally been supposed to prove hurtful, by checking expectoration: this is true when opium is given alone, yet, in com-

bination with nitrate of potassa and ipecacuanha, or tartar emetic, I have found it answer every indication. In some habits, its effects upon the functions of the brain stand, certainly, in the way of its exhibition; but in these instances I have found the acetate of morphia prove beneficial; and were this remedy less expensive, it would, with the exception of prussic acid, render nugatory the employment of every other narcotic. I have given it, dissolved in the bitter almond emulsion, in doses of one-eighth of a grain, once in six or eight hours, to children five years old. I have not found the same beneficial results from the use of the lactucarium, or of hyosciamus, both of which have been highly extolled as sedatives in hooping cough.

Belladonna has been very extensively employed on the continent, as an antispasmodic, in hooping cough; and we might, *à priori*, augur well of its power from its general effects upon the nervous system. In Germany, the root of the plant has been greatly extolled. It has been given, in doses of a quarter of a grain gradually increased to a grain, to children under one year of age; in doses of half a grain, at first, to children between the ages of two and four years; and in three quarters of a grain, to those above this period of life. I have had no experience in the use of the root; but my opportunities of witnessing the effects of belladonna have been numerous and satisfactory, and the cases now under treatment here will enable you to verify the opinions I have to offer to you concerning it. I have generally given the medicine, at first, in doses of the tenth of a grain, to children of from two to five years of age; and, to insure the accuracy of the

dose, have prescribed in the form of pills made up with crumb of bread, which, as they are small, are readily swallowed in a teaspoonful of pap or gruel. In combination with the extract of belladonna, I have usually prescribed ten or twelve grains of the subcarbonate of potassa or of soda, and half a grain of powder of ipecacuanha, to be taken in an ounce of the bitter almond emulsion, between each dose of the pills. The result of this treatment has been the diminution of the cough, both as to violence and the frequency of its recurrence; and except in a few instances, which I am inclined to refer to idiosyncrasy, the plan does not appear to have been productive of the smallest inconvenience. When the dose has been too suddenly augmented, or when too large a dose has been given at first, it dilates the pupil, produces a paralysis of the retina, and a consequent temporary blindness, which continues two or three days after the medicine has been discontinued, but seldom occasions any other unpleasant effect. In one case, however, in which a boy, five years old, had taken the dose intended for his brother of nearly double the age, the head was singularly affected: a state of delirium, not unlike that attendant on mania, supervened; and although the attention could be easily roused, yet the mind immediately relapsed into its morbid state, and continued so for two days and nights, during which there was uninterrupted watchfulness. I generally continue the use of the belladonna, gradually augmenting the dose, until a scarlet eruption cover the skin, when I stop until this disappears. Whilst this eruption is out, the cough ceases, and if it do not soon sub-

side, the habit is so much overcome as to prevent the recurrence of it with as much severity as before.

Digitalis has been given as a sedative in this stage of hooping cough, but with various results. The unsuccessful instances, however, in my opinion, have arisen from the exhibition of the remedy under improper circumstances; nor do I think that the manner in which this powerful remedy operates on the animal economy is generally understood. Digitalis has been given to keep down the arterial action in hooping cough, as well as in mania,—an effect which I am satisfied it produces in neither disease, unless it be given in large and nauseating doses, and unless the arterial excitement be previously lowered. When this has been effected, when the pulse is feeble, and the habit in a state approaching to that of debility or general relaxation, digitalis is a most certain and powerful sedative, calming nervous irritation, allaying spasmodic action, and inducing sleep. The striking effects of this article of the *materia medica* in mania, first induced me to employ it in hooping cough, and in delicate habits I have found it answer my expectations. The form of the remedy which I have usually employed is the tincture, which I give, according to circumstances, in small doses at first, gradually increased to an extent much beyond what is generally imagined can be safely prescribed. Thus, in hooping cough, I have carried the remedy to the extent of forty drops, three times a day, to a boy eight years of age; and in adults, laboring under mania, I have given it, with the best effects, in doses of 110 drops, once in eight hours, for ten days successively.

Alkalies and the prussic acid act,

nearly in the same manner, on the coat of the stomach, and through that organ on the general system. When taken into the stomach, their first effect is on the nerves of the viscus, the irritability of which they lessen in proportion to the extent of the dose, and communicate this effect by sympathy to the larynx. Prussic acid, in particular, is unquestionably the most powerful antispasmodic which can be employed in hooping cough; and it has the advantage of being equally useful in every stage of the disease,—the due apportionment of the dose and its combinations enabling it to answer the indications to be attended to in every stage of the complaint. Thus, in the first or febrile state, the prussic acid, given in medium doses of one or two minims to children of ten or twelve years of age, in combination with ipecacuanha and nitrate of potassa, moderates the fever; in the second or spasmodic stage, in larger doses, it allays the violence of the cough; and in the last stage, in small doses of a single minim, combined with infusions of bark, it aids the tonic power of the bark, by allaying the irritability of the stomach, and thereby enabling the gastric fluid to be secreted more slowly, consequently in a more natural state, and better fitted for the purposes of digestion. In one of the cases now under treatment, the dose is one minim only, owing to the great delicacy of frame of the child; but in the others, the dose is two minims, repeated every fourth hour.

Musk, conium, the sedum palustre, and acetate of lead, have been used by different physicians, and have been extolled; but I have had no opportunity of forming an opinion as to the efficacy of any of them, except conium, which has rather

disappointed my expectations in hooping cough. I am well aware, however, that in the form of extract, much depends on the preparation of the remedy; and even in the form of powder, the manner in which the leaves are dried, and the powder is preserved, will greatly alter its influence as an antispasmodic.

Besides the employment of sedatives in this stage of the complaint, stimulant remedies are also prescribed, with the view of subduing the propensity to spasmodic action in the trachea, by exciting, as Dr. Good remarks, “a general or remote local revulsion.” But, unless as external applications, I have had no experience of the value of this class of remedies. The internal stimulants which have been employed in hooping cough are cantharides, ammonia, ether, camphor, myrrh, the herb paris, and the rhus *vernix*. The external stimulants are camphor, garlic, ammonia, oil of amber, turpentine, tartar emetic, and tincture of cantharides, all of which I have seen beneficial, when employed in combination with oil or soap liniment, in the form of embrocations; probably producing their good effects by stimulating the dorsal and cervical nerves, which are those chiefly concerned in the function of respiration.

That period, in the progress of hooping cough, in which the spasmodic state has somewhat abated, and the cough is kept up rather by habit than by the continuance of the operation of that virus which originally produced it, is regarded as its third stage. The frame of the body, and its powers exhausted by the previous diseased action, is morbidly susceptible of every impression which can keep up the spasmodic habit. In this stage,

therefore, tonics are judiciously prescribed; and the preference is given to those which produce their effects most quickly, and are the least disagreeable to the palate. Cinchona has been employed for this purpose since the days of Sir John Floyer, who lived in the seventeenth century; it is now superseded by the sulphate of quinia, which can be given to children in the form of pills with as much facility as the extract of belladonna. I have employed the oxide and the sulphate of zinc, nitrate of silver, iron in various forms, and the arsenical solution, as tonics in this stage of hooping cough, and feel some difficulty in determining to which I should give the preference. Perhaps the best of all tonics, at this period of the disease, is change of air; and this, in conjunction with ass's milk and the mucilage of the lichen islandicus, I have seen restore children worn down to skeletons, and rapidly becoming tabial, when no other human means appeared likely to save the little sufferers.

The diet in hooping cough should be of a vegetable and farinaceous kind, until the second stage of the complaint be over; after which, light animal food may be allowed.

I have only further to notice that the hooping cough is said to be cut short, in its progress, by vaccinations on the third week after the commencement of the hoop. This method of treatment was first suggested in Germany, and its efficacy is said to have been lately confirmed in America. Allowing that the observations of this influence of vaccination be correct, the remedy must always be of very limited utility, as it is not likely that vaccination should be delayed, with the risk of smallpox being taken in the

interval, in order to keep it in reserve as a remedy in hooping cough.

II.

EXERCISE OF INFANTS.

A PROPER attention to exercise is not less important during the early periods of infancy, than in after life. Upon it depends, in no trifling degree, the health of the little being, as well as the proper development and freedom from deformity of every part of its body. An infant is, however, from the very state of its organization, unfitted to sustain any very active exercise. Its bones and muscles are as yet incapable of bearing the weight of the body, and of course all the exercise it can enjoy is that which is communicated to it by its nurse or attendant. The earliest species of exercise to which children are submitted, is that of rocking in a cradle. Without objecting to the motion thus communicated, when it is gentle and not too long continued, or too frequently repeated, we must be permitted to say that under opposite circumstances it is more or less injurious. It is especially so when resorted to immediately after the child is taken from the breast, or for the purpose of composing it to sleep when restless or fretful. The best exercise for a young infant is obtained by allowing it to amuse itself upon the nurse's lap, and by carrying it frequently about in the arms. When sufficiently old to be attracted by surrounding objects, taking it frequently into the open air, especially in the country, during the milder seasons of the year, has a highly beneficial influence. The freshness, beauty and variety of the scenes of nature, are highly