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AN
INAUGURAL DISSERTATION

ON THE

HOOPING COUGH.

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INAUGURAL DISSERTATION

ON THE

PERTUSSIS, OR HOOPING COUGH.

Submitted to the Examination

OF THE

Rev. PETER STUDDIFORD, v. D. M. & P. T. Præf.

AND TO THE

TRUSTEES AND FACULTY

OF

QUEEN'S COLLEGE NEW-JERSEY;

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

With the Rights and Immunities thereunto appertaining.

By ABRAHAM CORNELISON,

OF NEW-YORK.

*Unda impellitur unda,
Urgeturque prior venienti, urgeturque priorem.*

OVID. METAM.

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T O

NICHOLAS ROMAYNE, M. D.

*Whose Usefulness as a Teacher and Practitioner of Medicine
justly merits the Attention of every Well-wisher
to Humanity;*

AND,

*In whom are united all the Qualifications necessary to render
him a useful Member of Society:*

THIS

DISSERTATION

*Is inscribed, with every Mark of Respect, by his Friend
and former Pupil,*

The AUTHOR.

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A N

INAUGURAL DISSERTATION

ON THE

HOOPING COUGH.

AMONG the diseases incident to the human body, those which have raged as epidemics, have particularly attracted the attention of Physicians. At no period of life is a contagious disease more distressing than during infancy and childhood: In that helpless stage of life symptoms must be more manifest before they can be known; and when they are known, much difficulty attends the administration of remedies for their relief.

I have for these reasons chosen for the subject of this Dissertation, the *Hooping Cough*, *Pertussis*, a disease, which, though it commonly affects infants
and

and children, yet sometimes attacks any age and sex, and has at times put on such serious symptoms as to prove fatal. This disease, although it commonly affects persons but once in the course of life, has yet on some occasions its attacks two or three times repeated on the same individual.

HOOPING COUGH

History of the Disease.

THE Pertussis is a contagious disease which affects almost every person once in the course of their lives, and children appear to be mostly its subjects; still there are not instances wanting of its affecting persons at different periods of life. But how little do adults experience its baneful effects in comparison to those infants who cling for support to their mother's breasts.

This disease generally comes on with all the apparent symptoms of catarrh arising from cold, and sometimes goes off in this manner, without putting
on

on the convulsive cough;* but it does not frequently terminate so favourably, for generally after a few days it puts on its characteristic symptoms.

Doctor CULLEN has defined this disease to be, “*Morbus contagiosus; tussis convulsiva, stragulans, cum inspiratione sonora, iterata; saepe vomitus.*”†

The most peculiar and characteristic symptoms of this disease are the convulsive coughings, which are made with an increased frequency and violence of the expiratory motions, when the muscles of the abdomen and thorax are spasmodically affected.

The Hooping Cough differs from every other form of coughing, as the expiratory motions are convulsively made; the air being thrown out of the lungs, a full inspiration suddenly succeeds, whereby the air forcing itself into the glottis with great and unusual velocity, causes that peculiar sound which we call the *Hoop*. Hence the name of *Hooping Cough*.

B When

* CULLEN's Practice of Physic, and Dr. WALLIS on the Prevention of Diseases.

† Synop. Nosol. CULLEN, G. lvii.

When this sonorous inspiration has happened, the coughing is frequently renewed as before, until the contents of the stomach are vomited up, or a quantity of acrid mucus discharged from the lungs; either of these evacuations puts an end to the paroxysm, when the patient returns to a degree of comfort.

Different opinions have been entertained respecting the seat of this disease. One very erroneous opinion is, that the intestines are affected.* Another opinion, not quite so erroneous as the former, is, that the stomach and lungs are both affected.†

That the stomach suffers from the contagion is not very probable, although vomiting frequently happens. The contagious matter particularly affects the trachea and lungs, proves a source of irritation to them, and excites that violent spasmodic cough which affects the stomach, and causes vomiting from the effects of sympathy. Instances occur daily of extraneous matter getting in the trachea, and there
 proving

* Vide Dr. BUTTER'S Treatise.

† Vide Treatise on the Diseases of Children, 1772. †

proving an irritation, which excites coughing to a violent degree, and generally ends in vomiting; the truth of which every person must be convinced of by experience.

When this disease puts on its peculiar symptoms, it continues without any limited duration, frequently two, three, and four months, with a variety of symptoms.

There are no exact periods between the fits of coughing; they frequently occur in the day, and still more frequently at night; and the patient having some knowledge of its approach, with fear of its convulsive tortures, catches hold of his nearest object until the paroxysm is over. When the coughing is over, the patient appears fatigued, with a hurried breathing, but is soon relieved.

In the beginning of the disease there is little or no expectoration; the cough is violent, and of long duration; but when an expectoration of mucus comes on, or a vomiting follows the coughing, the patient feels himself relieved, and has a desire for food.

In coughing, the free transmission of blood is interrupted through the lungs, which prevents the return of blood from the head. This causes that suffusion and fullness of the vessels of the face; whence the eyes become prominent, and their vessels frequently ruptured, and blood is discharged from them, and sometimes from the nose and ears. Cases have occurred when the vessels of the lungs have been ruptured and an hæmoptysis followed.

Although this disease frequently takes place without pyrexia or febrile symptoms, still it is far from always being the case; for I have observed several cases, in the beginning of which a considerable degree of pyrexia was evident. I believe, in opposition to Doctor CULLEN, that the fluids do undergo a change; and Doctor MORRIS farther justifies my opinion, by relating a case where the patient was bled, and the blood put on an inflammatory appearance; or, in his own words, *it was covered with size.**

That

* Vide Lond. Med. Observ. vol. iii.

That a symptomatic pneumonia may be brought on in consequence of the violent agitation of the lungs in coughing, I do readily believe; but being foreign to this subject, we cannot give it a consideration here.

Diagnosis.

THE knowledge of distinguishing diseases is not less important than that of their cure; it therefore particularly claims the attention of the Physician.—As this disease, of which I have given the history, has symptoms so peculiar to itself, we shall find no difficulty in giving it its proper arrangement when it occurs; for though this disease may in the beginning have some symptoms resembling catarrh, yet, when we attend to its progress, considering at the same time the prevailing epidemic, we cannot hesitate in determining rightly concerning this complaint.

The symptoms of the Measles differ so much from those of the Hooping Cough, that they cannot be confounded: while the former is always accompanied with pyrexia, followed by eruptions, dispersed over the body, which, in a few days, goes off in scales, in the latter there is seldom any pyrexia; no eruptions ever appear, but the disease continues its peculiar and characteristic symptoms, as described in the history. There is an acrid discharge in the Measles from the nose and eyes, but this is said to be also peculiar to the Pertussis,* and therefore cannot be a distinguishing symptom.

Predisponent and Exciting Causes.

PREDISPOSITON is that state of body which renders it susceptible of being acted upon by contagious matter. A state of debility, or one verging towards it, appears to favour the operation of contagion;

* Vide Dr. WALLIS on the Prevention of Diseases.

tagion; and from this we account for its affecting particularly children, who are especially in that state; while adults, who have acquired vigor and activity, frequently escape. But will not many object to this, and say there is no predisposition necessary? if this were so, why does it not attack the robust as frequently as the infirm? and why not adults as frequently as children? A predisposition is indeed not always necessary, for many are affected merely from the application of the contagious matter; the nature, essence, and qualities of which is as yet unknown, and only particularly attracts our notice, as being the remote or exciting cause of this disease. Although this contagion affects some of the functions necessary to life, still its effects are not so deleterious as the infectious matter of some other diseases, which produce the greatest debility, and not unfrequently immediate death; while this is slow in its operation and its progress, but sometimes increases in violence, until it brings on some symptomatic complaint, in which manner it most frequently proves fatal. It has also proved fatal sometimes when the disease had occurred only a few days, on which occasion the air

vessels

vessels of the lungs have been found full of mucus. This has occurred mostly in persons debilitated previous to their contracting the disease, and particularly to infants.

Proximate Cause.

IN the beginning of this disease we observe no spasmodic affection of the lungs, but an evident increased action of the excretory vessels, so that the mucus glands discharge freely. The effects of the contagious matter debilitates the system, and in consequence all the characteristic symptoms of the disease are induced. This plainly proves that there is a spasmodic affection at the seat of the disease, which we shall consider as its *proximate cause*.— Though this disease does not appear at first to be accompanied with much debility, yet it soon becomes such; and we shall therefore observe two different modes of treatment in the same disease at different periods.

Prognosis.

Prognosis.

TO prognosticate the future event of this disease, it is highly necessary that due attention be paid to the appearance of symptoms which have presented themselves, to the patient's constitution, and the diseases to which he has previously been subject.

We have observed in the history, that children suffer most from this disease, and the younger they are the more liable to meet with an unfavourable termination, while those advanced in years are more secure; and Doctor CULLEN justly observes, that more die under two years than above it.

Children who are born of asthmatic and phthical parents, and are asthmatic themselves, are in great danger from this disease.

When this disease begins with the form of catarrh, accompanied with fever, difficulty of breathing, and cough, with little or no expectoration, it sometimes proves fatal.

An expectoration of mucus, whether too small or too great in quantity, is attended with danger; as the latter may tend to produce great debility, the former a difficulty of breathing, and frequently suffocation, the mucus being still contained in the lungs.

Violent paroxysms of coughing have proved dangerous by occasioning apoplexy and epilepsy; but these accidents do not frequently happen; and the danger of this disease arise mostly from the fever and dyspnoea attending it. These are the symptoms which principally denote an unfavourable event.— We shall now endeavour to point out some symptoms which are more favourable.

If this disease is fully formed, and the fits do not return with frequency and violence, the expectoration be moderate, and the patient, in the absence of the fits, feels easy, his appetite continues to increase, sleeps well, and is troubled with no fever or difficulty of breathing, we may be justifiable in forming a favourable prognosis; and if the symptoms continue daily to become more favourable, the disease will soon altogether disappear.

Where

Where paroxifms terminate by vomiting, fucceeded by a defire for food, fuch cafes are generally without danger.

A moderate hemorrhage from the nofe has frequently proved falutary; but when immoderate, is commonly pernicious and dangerous,

Method of Cure,

THE cure of this difeafe is both difficult and tedious, whether we endeavour to moderate its violence, when it has a fatal tendency, or to fhorten its courfe when mild. When the contagion is prefent, and continues to act, we know not how to expel it from the fyftem; neither do we know how to correct its acrimony; but it is probable this contagion continues to act only for a certain time, and then ceafes, when the difeafe continues merely from the power of habit; but fhould the contagion be fup-
 pofed

posed to continue to act, the patient should be removed, if possible, to some other place.

From what we have said, we shall conclude that the indications of cure must be differently adapted, according to the period of the disease. In the beginning the medicine must be given with a view to prevent or moderate its violent effects, and tendency to a fatal termination; and when the disease has continued sometime, and its violence abated, our endeavours must be to check or interrupt its course, or cause it to disappear sooner than it would have done if left to nature.

To fulfil the first indication, an antiphlogistic plan must be observed, by avoiding every means which may tend to increase the action of the heart and arteries, such as animal food, spirituous liquors, and all kinds of severe exercise, &c. In plethoric subjects, where the pulse is increased in frequency and fullness, and where the blood seems to be transmitted through the lungs with much difficulty, bleeding appears necessary, and may sometimes be repeated. But diseases which are tedious in their cure, and
 prove

prove debilitating, and are of a spasmodic nature, do not admit the loss of much blood, therefore, great caution is requisite in bleeding, and particularly children, who experience mostly its bad effects.

Costiveness frequently attends this disease, and ought by all means to be removed; and no purgative is more suitable than the compound powder of jallop finely pulverised, to prevent griping; manna and fenna have also been used with the same good effect.

Calomel has been used for this and the like purpose, and it frequently proves serviceable, and perhaps more so when a quantity is taken in the system,* as it may tend to correct its acrimony and moderate the violence of the disease.

Symptoms of an inflammatory affection of the lungs sometimes occur in this disease; to remove which blistering appears to be the most proper means: They may, if necessary, be repeated, and ought to be applied as near as possible to the part affected. Issues have not that good effect, as a considerable
time

* Vide Dr. WILLIS.

time is wasted before any discharge is brought on, while the inflammatory symptoms continue to increase, and they prove very inconvenient; therefore blisters are to be preferred,

Emetics appear to be more serviceable in this disease than any other remedy, as they interrupt the return of the spasmodic cough; they likewise determine powerfully to the surface, thereby taking off determination to the lungs, and by agitating the thoracic viscera, they promote the expectoration of mucus. Antimonial emetics appear to be the most proper, and they may occasionally be repeated, although they have been condemned as improper,* contrary to the experience of almost every judicious Physician. Small doses of antimonial emetics may be given with advantage in the intervals of vomiting, if there be any inflammatory symptoms present.

These are the remedies which are to be administered in the first stage of the complaint, when the contagious matter is supposed to act; but when
the

* Vide BROWN'S Elements.

the disease continues by the power of habit, or from debility, a different indication appears necessary; tonics and antispasmodics appear most useful, by causing a change in the system, and thereby interrupting the convulsive paroxysms.

Castor has sometimes been used in this disease; and Doctor MORRIS takes notice of its proving serviceable to his children, while they were sent in the country to enjoy a change of air, to which I conceive we are to attribute more relief than to the castor, as it appears to have frequently proved ineffectual.

Musk has likewise been employed as an antispasmodic, but has not proved so successful as to advise its frequent administration.

Opium appears to possess all the properties of the two last medicines mentioned, but in a higher degree; and its administration is certainly adviseable when there are no inflammatory symptoms present, as it tends to moderate and interrupt the return of the spasmodic cough.

To restore the tone of the system, and thereby moderate the violence of the disease, and cause it to terminate favourably, perhaps no medicine has merited more attention from experience than the Peruvian Bark; it may with safety be administered when the disease appears to be of a debilitating nature, in such quantities as the patient can conveniently bear. The best form of administering bark is in substance, as we then can have the benefit of all its virtues; it should therefore, if possible, be given in this manner, mixed with a quantity of wine; but as children do not readily take it in this form, we should administer that preparation which appears to be next in quality, a preparation with magnesia, namely, the cold infusion.

Good living, accompanied with a moderate use of wine and exercise, enjoying at the same time a country air, contributes much to the cure of this complaint.

The Tincture of Cantharides has been used with success; it appears to be of a stimulating nature, causing a great change in the system, and thereby
interrupting

interrupting the spasmodic cough which occurs from habit.*

The good effects of cold in this disease must be evident, when we consider it to partake of a debilitating nature; and Doctor SYDENHAM takes notice of this disease yielding as the autumnal cold advances: And may we not readily believe that cold tends to brace the relaxed fiber, and give vigor and energy to debilitated systems? I therefore conceive that cold bathing, if properly conducted, will prove beneficial at any period of the disease, when debility be present.

* Vide LETSOM'S Med. Memoirs.



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