

A treatise on the nature and cure of the cynanche trachealis, commonly called the croup / by Disney Alexander.

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A
TREATISE
ON THE
NATURE AND CURE
OF THE
CYNANCHE TRACHEALIS,
COMMONLY CALLED THE
CROUP.

By *DISNEY ALEXANDER*,
MEMBER of the ROYAL MEDICAL SOCIETY of EDINBURGH.

*PRINCIPIIS OBSTA, SERO MEDICINA PARATUR,
CUM MALA PER LONGAS INVALUERE MORAS.*

HUDDERSFIELD :

Printed by J. BROOK, for J. JOHNSON, St. Paul's Church Yard,
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ESTC.

TREATISE

ON THE NATURE AND CURE

OF THE GYMNANCHE TRACHEALIS

COMMONLY CALLED THE

GROUP.

BY DISNEY KEENE

OF THE ROYAL MEDICAL SOCIETY OF LONDON

LONDON: PRINTED BY RICHARD CLAY AND COMPANY, LTD., BUNGAY, SUFFOLK.

1911

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Printed in Great Britain

TO
Mr. ROWLAND HOUGHTON,
SURGEON,

IN
HUDDERSFIELD,

Yorkshire,

THIS TREATISE,

IS INSCRIBED

AS A SMALL TOKEN

OF

ESTEEM AND FRIENDSHIP,

BY

THE AUTHOR.

MR. ROWLAND HOUGHTON

NEW YORK

AND

ALBANY

THIS TREATISE

BY

JOHN W. WALKER

OF

NEW YORK AND ALBANY

THE AUTHOR

INTRODUCTION.

AMONGST the variety of diseases to which children are more particularly liable, there are none more alarming in their nature, or more rapid in their progress, than that which is the subject of the present Essay.

There is reason to believe, it has prevailed much more frequently of late years than formerly; at least, we find no regular mention to have been made of it till the time of Boerhaave*.

B

Sauvage

* Vide Aph. 801.

Sauvage describes the same disease under the name it now retains, and both these authors agree, in attributing to it the characteristic symptoms by which later writers have distinguished it.

It is noticed also by Dr. Ruffel, in his “*Œconomia Naturæ*,” and by Dr. Millar, in his Observations on the Asthma and Hooping Cough; the former giving it the the term of *Angina inflammatoria infantium*, the latter that of *Acute Asthma*. According to this author, “it was peculiar to
 “ children from one to thirteen years old,
 “ prevailed most in spring and autumn,
 “ in moist seasons accompanied with east
 “ and north-east winds, and among the
 “ lower orders of people. Children at play
 “ were sometimes seized with it, but it generally came on at night, A child who
 “ went to bed in perfect health, waked an
 “ hour

“ hour or two afterwards in a fright, with
 “ his face much flushed, sometimes of a
 “ livid colour, incapable of describing what
 “ he felt, breathing with much labour and
 “ with a convulsive motion of the belly ;
 “ the returns of inspiration and expiration
 “ succeeding each other in that particular
 “ sonorous manner, which is often ob-
 “ served in hysteric paroxysms*.”

Dr. Ruty mentions this disease being
 epidemical in Ireland, in the Year 1743†.
 Other writers have described it as occur-
 ring at different times, under the terms of
 Cynanche laryngea‡, Cynanche stridula§,
 morbus strangulatorius||, &c. &c.

“ But

* Vide Dr. Johnson's Treatise on the Malignant
Angina.

† Vide Ruty's Chronological History of the Weather.

‡ Eller de cogn. & curand. morb.

§ Crauford Diss. Mong. Edinb.

|| Starr. Phil. Transf. No. 495.

But it appeared to have been but imperfectly known, both in respect to its cause and method of cure, till Dr. Home published his Enquiry into the Nature, Cause, and Cure of the Croup, He says, “ it is
 “ a disease which appears to belong peculiarly to children, and that the younger
 “ they are after they are weaned, the more liable they seem to it. I never,” he adds,
 “ saw or heard of one above twelve years old affected by it. It seems likewise in
 “ a great measure to have a local situation, and to be very seldom found at any great
 “ distance from the sea shore, The leading symptoms,” he observes afterwards,
 “ are the shrill voice and difficult breathing; it may therefore be properly called
 “ Suffocatio stridula.”

Both Dr. Cullen and Dr. Underwood in his Diseases of Children take notice of this complaint.

complaint. The first of these has given a most accurate history of the symptoms with which it is attended, and, in regard to its cause and cure, has adopted, with a little variation, the sentiments of Dr. Home.

The frequent occurrence of the disease in the town and vicinity of Halifax, during the winter months of 1792 and 1793, afforded the author of the following sheets many opportunities of attending to the phenomena it presented. He accustomed himself to commit to paper, some of the most remarkable cases which occurred in the course of his practice, at a time when he entertained not the most distant idea of ever communicating them to the public; but since the Croup still continues to prevail, more or less, and, on account of its frequent fatality and the rapidity of its termination, is become a subject of general alarm, and, consequently,

consequently, appearing to him to be deserving of more serious attention than has hitherto been paid to it, he is induced to publish the result of his observations; and if they should prove a means of exciting others, to a further prosecution of the same enquiry, or be found to suggest any hints, by which the judgment of the inexperienced practitioner may be assisted, or the method of cure rendered more decisive and effectual, the author will think himself abundantly rewarded for his pains.

Halifax,
March 10, 1794.

D. ALEXANDER.

A T R E A T I S E
ON THE
NATURE AND CURE
OF THE
CYNANCHE TRACHEALIS.

IN order to treat the subject methodically, endeavouring at the same time to be as concise as possible, I shall consider it under the following distinct heads:

First, I shall give a short account of the History of the Croup, as it has appeared in this part of the country.

Secondly, I shall subjoin certain Cases, which have fallen under my observation in
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the course of practice, by which the nature of it may be better illustrated.

Thirdly, I shall take notice of the Appearances discoverable upon Dissection.

Fourthly, I shall consider the Cause or Nature of the Croup :—And

Lastly, Its method of Cure.



History.

It is evident, from the concurring testimony of all authors who have written upon the Croup, that this disease is to be regarded as peculiar to the state of childhood. No case has ever come to our knowledge, of any above the age of twelve or thirteen having been affected with it; and it seems that the nearer they approach to this time of life, the less subject they become to it.

Children,

Children, while at the breast, are not unfrequently attacked with it; and I have known three or four instances, in which it has seized infants at the early period of six months after birth. Those of an unusually florid complexion and plethoric habit, and who possess an activity and vivacity of temper disproportionate to their years, are most obnoxious to it.

In cold and wet seasons, particularly in the depth of winter and beginning of spring, its attacks are most prevalent. It is not, as Dr. Home conjectured, local in respect to its situation, nor is it confined to low marshy countries, but seems equally likely to be produced in any climate and at any season, in a cold moist atmosphere; particularly if subjected to sudden vicissitudes of heat and cold.

It does not appear to be infectious; but like most other catarrhs, of which this is a species, depends upon the state of the air,

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and upon a remarkable predisposition of the part immediately affected.

The definition Dr. Cullen has given of this disease is so very accurate, and agrees so circumstantially with what I have almost invariably remarked, in those cases which I have had an opportunity of attending, that I shall insert it here, in his own words.

“ Cynanche (trachealis) respiratione difficili, inspiratione strepente, voce raucâ, tussi clangosa, tumore fere nullo in faucibus apparente, deglutitione parum difficili, et febre synocha.”

The manner in which the Croup makes its appearance is not uniformly alike. Sometimes the attack is as sudden as it is unexpected, the symptoms, above enumerated, raging with the utmost violence from the first; but, in the generality of cases, these have been preceded by slight shiverings, alternated with heat, lassitude, thirst, and other signs which indicate the presence of
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the febrile diathesis. At other times, a dry short cough has appeared for several days previous to the commencement of the disease, and has continued to add much to the distress of the patient during its progress.

It has been remarked, that the symptoms now and then intermit*, and that, in the interval of the paroxysm, the breathing is free and undisturbed: But in all the strongly marked cases of Croup, which I have observed, there appeared little variation in this respect.

The disease is known by a difficulty of breathing, attended with a wheezing sound †, in inspiration, which, in the commencement,

* Febris quoque oritur quæ quanquam remissionum tempora satis libera habeat, tamen singulis accessionibus respiratio crebra difficilisq. urget, ita ut infans, non nisi rectâ cervice spiritum ducere et vix lecto se continere possit, nonnunquam etiam furgere coactus sit.

RUSSEL.

† Sonum inter vagitus raucum edit, et stridulum quoque clangosumq. aliquando spiritum intus ducit.

RUSSEL.

mencement, is either more or less audible, in proportion to the violence of the attack. Great heat of the skin, intense thirst, pain and tension about the larynx are felt, accompanied with flushings in the face, and frequent retchings to vomit. The voice shrill and sharp*, indicates the diminished diameter of the trachea, and an uncommon degree of restlessness and anxiety prevails. The pulse is exceedingly quick, and, in the beginning, always full, becoming gradually more weak and soft; and the tongue, at first white, soon acquires a brown, darkish hue. Vomiting is a frequent occurrence, but is rarely observed, except in the beginning of the complaint. This is, however, one of those symptoms which may or may not happen, on this account properly termed accidental, and which lead to no inference, from which any practical advantage may be derived in the treatment. The mouth
is

* Vox acuta, clangosa, sibilans—respiratio parva, frequens, erecta cum molimine.

is commonly filled with faliva, which appears more viscid than usual; and sometimes “ films resembling a portion of membrane,” or matter of a purulent nature, are spit up; but in many cases not the least expectoration is observed. During sleep, if the patient gets any, the respiration is, in general, performed with greater difficulty than when he is waking, and sleep itself is very short and much interrupted. Neither swelling nor redness are perceived in the external fauces; seldom indeed is there found any inflammation or tumour in the internal, though sometimes the tonsils and uvula seem preternaturally red. The desire for food is entirely lost; but the power of deglutition is little impaired. During the whole progress of the disease, there is rarely any perspiration on the skin, the urine is high coloured and in small quantity, and the senses remain distinct to the last. “ With
 “ the symptoms now described, and parti-
 “ cularly with the great difficulty of breath-
 “ ing, and a sense of strangling about the
 “ fauces

“ fauces, the patient is sometimes sudden-
 “ ly taken off.”

In the severest attacks of this disease, death has sometimes happened in the space of twenty-four hours; four instances of which I have myself seen; several days, however, in general elapse, prior to its termination. The period is protracted much longer, where there are regular intermissions; and I have known patients to linger twelve or fourteen days in this precarious situation.

It seems as if children who have once been attacked with the Croup, are more particularly subject to be seized with it afterwards. I attended one child, who had had it three times; each attack being less violent than the preceding one.

With respect to those signs which are reckoned favourable or unfavourable in this disease, it may be observed, that in proportion to the sudden appearance and violence of
 of

of the original attack, so will be the danger to be dreaded. The more sonorous the inspiration, and the greater the fever, so much the more hazardous the event is to be esteemed. When the cough is attended with expectoration, and if after this the breathing be more free, when there are distinct intermissions, and when, upon the application of those means we shall hereafter advise to be used, there appears a manifest mitigation of the symptoms, under these circumstances, a favourable termination may be expected. And, from considering the success of that practice which I have both employed myself, and seen employed by others, I think myself not unauthorized in giving it as my opinion, that in four out of five cases, the disease may be cured by the timely application of the proper remedies.

I have selected the following cases, out of a great number of others which have at different times engaged my attention, chiefly for two reasons;—first, because they were
all

all of them so clearly marked, that not a doubt could be entertained, by any one, of the nature of the complaint;—and secondly, because they are fully demonstrative of the good effects of the practice adopted in the generality of them. I might have added many more, but had I done this I should have exhausted the patience of the reader, by a needless repetition of symptoms and events; neither did I see the necessity of augmenting their number, since the disease I treat of is no longer new or undescribed*, and as those which I have adduced are sufficient, in my opinion, to confirm the success of the remedies employed.

Cases.

* Dr. Home considers this disease, “as entirely unknown, as to its nature, cause, effects, and cure,” at the time when he published his enquiry.

Cases.

C A S E I.

January 3, I was sent for to see a child, nine months old, who was seized with great difficulty of breathing, attended with a sense of constriction about the larynx, which seemed to threaten almost instant suffocation. She had had no complaint before, except an apparent dulness in her eyes, and a loss of that vivacity of countenance, for which she was particularly marked. I found her very hot, red in the cheeks, and very thirsty, though she could swallow not more than a teaspoonful of any fluid at a time. Her pulse was very full and quick, and her respiration was so loud as to be heard distinctly in an adjoining room. Having never seen a case exactly similar before, I desired another practitioner might be called in. We prescribed ipecacuanha wine, but without effect ; we next gave some lax-

D

ative

ative medicine, and, the child still growing worfe, and the difficulty and noife in breathing increafing, we put fome leeches upon the throat. All was to no purpofe; the child died in lefs than twenty-four hours from the attack.

C A S E II.

February 10, I went to fee a child, a year and half old, who was attacked fuddenly with a croaking found in infpiration, and a violent oppreffion in her breast. I found her extremely hot, her pulse uncommonly quick and much fuller than ufual, her tongue parched, her face violently fluffed; ſhe had a ſhort tickling cough, which ſeemed to diſturb her very much, and her breathing was extremely quick and laborious. She had vomited once a greeniſh coloured matter, mixed with a great deal of tough phlegm. I ſaw this patient early in the morning, and in about an hour after ſhe began to have theſe complaints.

I immediately

I immediately ordered four leeches to the throat, and two to the hands; I gave her an antimonial emetic, and directed a blister to be put on after the bleeding had ceased. I visited her again in the evening; she still continued to bleed, she had vomited twice, and had several stools, had coughed up some white viscid mucus, breathed more freely and with less noise, and appeared very pale in the face. She had drunk plentifully of water during the day, and began now to be very fretful and cross.

The blister had not been applied, owing to the bleeding continuing so long. Finding my patient so much better, I did not see any reason to employ this remedy. I, therefore, ordered a few grains of nitre, and a grain of pulvis antimonialis, to be given every two or three hours. Feb. 11, she had slept tolerably; during the night she had some slight return of the difficulty of breathing, and she started very much during her sleep. This morning, however, she appeared in all respects better; the powders, especially

cially the last, made her sick; she had had two more stools, and her thirst, which was very great the day before, was considerably abated. Her tongue was white, but more moist. Her cough was not so troublesome, and she expectorated freely. The powders were repeated every three or four hours, and the child took several times a little biscuit, and drank lemonade. Feb. 12, she had passed a much better night than the former; she now ate some boiled milk and bread, which, however, she threw up soon after. She had her medicines repeated, and took them less frequently. Her pulse was nearly restored to its natural state, and she gradually recovered her health without any other medicines.

C A S E III.

I was favoured with the following account of the two next Cases by Mr. Shaw.

December 1, a boy, two years and a half old, was attacked, whilst he was at
 play

play, with a great difficulty of breathing, and a croaking sound in inspiration. He was exceedingly feverish, and appeared very much stuffed at his breast. He had also an external swelling in his throat. Six leeches were immediately applied to his throat, and the antimonium tartarizatum given every half hour, till it produced vomiting. In the evening he was somewhat easier; the breathing was more calm, and the fever abated; the leeches had bled well, and the vomit had answered its intention. Not having had a stool, he was ordered some jalap and infusion of senna. Dec. 2, had had a restless night, difficulty of breathing returned with the fever, he had had no stool, and was seemingly worse in all respects; four more leeches were applied to the hands, and the vomit was repeated. In the evening he was evidently better, and some cathartic solution, with nitre and pulvis antimonialis, was given every two hours, during the night. He continued much better on the 3d; but, early in the morning of the 4th, the child was attacked
more

more violently than ever, the croaking inspiration became much more sonorous, and the difficulty in breathing increased. Leeches were applied to the throat, and a vomit of antimon. tartar. was given. In the afternoon the child was much relieved, the bleeding continued, the vomit had operated well, and a quantity of tough whitish phlegm had been ejected. He was now ordered some laxative medicine, with small doses of pulv. antimon. and he continued, gradually, to grow better, though he has never since perfectly recovered, either his strength or his spirits.

C A S E IV.

Dec. 20, a girl, two years old, after going to bed apparently in perfect health, was attacked, early in the morning, with the symptoms of the Croup, in a very high degree, and with a considerable pyrexia. Her pulse was remarkably full and quick, her tongue very much discoloured, and her
skin

skin hot and dry. She coughed often, but brought up no phlegm, though her mouth and throat seemed full of saliva or mucus. The noise she made in inspiration, most exactly resembled the crowing of a cock, and the shortness of breathing was far greater, than I ever observed before in a similar case. Six leeches were immediately put upon the throat; a blister was applied, and a vomit of antimon. tart. was given. The breathing became more free after vomiting, and, in the afternoon, all the symptoms were very much abated. At night, however, she was a good deal worse, and her breathing became as bad as before. The fever and restlessness, likewise, returned in a violent degree. Four more leeches were applied to the hands, and a mixture, with pulvis antimon. and cathartic salt, was ordered to be given very often, during the night, till it produced either a copious vomiting, or some stools. The orifices continued bleeding, all the night; she had vomited several times, and had drunk plentifully of cold water. 21, I found her
considerably

considerably better. She continued the same medicine, and, in the evening, took some milk and bread, which she seemed to eat with a good appetite. In the night she had a return of the fever, and difficulty of breathing, and was very much stuffed in her breast; she became exceedingly thirsty, and she coughed apparently with much pain. 22, early in the morning, I visited her, and found her as ill as she was at the first, with this exception only, that she was free from that croaking sound in inspiration, which so particularly characterized the original attack. Three or four leeches were again put to the throat, her feet put into warm water, and the pulv. antimon. was given in a larger dose, till it operated. The bleeding continued several hours, she threw up a quantity of viscid mucus or phlegm, had several stools, and, in the evening, was in all respects much better, and free from fever. 23, she had passed a tolerable night, expressed a desire to eat something, breathed easily, and had little or no fever. She took some tea and dry toast, which agreed very

very well with her. The medicines were repeated in a smaller dose, and the patient, in a few days, perfectly recovered.

C A S E V.

January 21, a child, six months of age, was attacked, without any preceding complaint, with the symptoms of the Croup. He was exceedingly feverish, and breathed very short and loud. He coughed up a good deal of phlegm; his pulse was feeble, and so quick as not to be counted. I immediately put three leeches upon his throat, and one on his hand, applied a blister to the part, and ordered a powder of calomel and sugar, with some infusion of fena with manna. 22, breathing much relieved, and fever abated, the countenance very pale, the leeches had done their office very well, and the other remedies had answered the intention. Powders of calomel, with nitre, were given, for a day or two, in very small doses, and often repeated; and the patient

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was

was perfectly free from all complaint by the end of the month.

In about three months afterwards, on being more than usually exposed to a cold damp air, he caught a return of his disorder, and was cured by the same means.

CASE VI.

A girl, eight years old, who had enjoyed good health, and had been of an uncommonly active disposition, was indisposed, for a day or two, with a cough and pain in her throat. She was seized suddenly, Nov. 22, with a violent shortness of breathing, and that peculiar croaking noise in inspiration which distinguishes this from all other diseases. A blister was applied to the throat, and a vomit given her, which answered well; but as she appeared not to be relieved, and grew evidently weaker, her pulse, at the same time, becoming more quick and feeble, six leeches were applied
to

to her throat; but, before the orifices had done bleeding, the patient died. This happened in twenty-four hours from the first attack.

C A S E VII.

A child, ten months old, began to breathe with great difficulty, to be very hot and restless, and cough up phlegm. Her breathing soon became so short and sonorous, as to alarm extremely all who were present. On seeing the child, I found her very feverish, her pulse exceedingly rapid, her face flushed; she had frequent retchings to vomit, and appeared very dry. The croaking noise in inspiration was particularly manifest. April 5, three leeches were applied to the throat; calomel and infusion of senna were given as before. 6, in the morning I found a wonderful alteration for the better. The fever and the shortness of breathing were considerably abated; she had lost a great deal of blood, and appeared very pale in the countenance and much exhausted.

hausted. Powders of nitre and pulvis antimonialis Londinensis were ordered in a small quantity, and she continued to gain strength every day. Seven months afterwards the complaint returned; she was again bled, had a blister to her throat, and used the same remedies as before. In two days the difficulty of breathing and other symptoms disappeared, and she recovered quickly. The ensuing spring a third attack came on, but less severe than the preceding ones. The same remedies were attended with equal success, and the patient was again restored to health.

It is worthy of remark that, in each of these attacks, a copious discharge from the perspiratory vessels, came on before the child was relieved, and, in proportion as this took place, the flushings in the face and feverish heat abated.

CASE

C A S E VIII.

A boy, three years old, began to be very feverish, and to have a bad cough, for which he got some laxative medicine. His symptoms, however, increased, and on May 7, I was desired to see him. He breathed very laboriously, and with the same croaking noise which I have before described. He had much fever, and was exceedingly troubled with phlegm. Leeches were applied to his throat and hands, calomel and infusion of fena were given him. May 8, all his symptoms greatly relieved. A mixture with nitre and antimonial wine were ordered, and he gradually recovered his health and his strength.

C A S E IX.

October 9, a child, four years old, was seized suddenly with all the symptoms of the Croup. Leeches were put upon his
hands

hands, and bled freely, but without relief; a vomit was given him, and afterwards some laxative medicine, 10, early in the morning, I found him no better; the difficulty of breathing increased, and we were every moment apprehensive of his last; four leeches, however, were instantly applied to his throat, and a blister put on between the places where the leeches had bitten; the relief, procured by these means, was presently visible; a great deal of viscid mucus was expectorated, the fever subsided, and the patient, in a few days, went out of doors.

C A S E X.

April 6, I visited a child, a year old, who was attacked with symptoms of the Croup, in which there were evident intermissions, neither was there so high a degree of fever present as in the cases before mentioned. She was sometimes, to all appearance, free from complaint for six or seven hours, when the symptoms again recurred
as

as violent as ever, and continued an indefinite time. Now and then they seemed to be relieved by opium, joined with the volatile fœtid spirit; at other times blisters did service. She never discharged any phlegm, and was seldom hotter than usual, even during the paroxysm. She continued better and worse for the space of ten days, gradually growing thinner and weaker, when a strong convulsive fit suddenly seized her, attended with the utmost difficulty of breathing, and, in a few minutes, deprived her of a miserable existence.

C A S E XI.

March 9, I was sent for, in great haste, to visit a girl, between nine and ten years of age, who, as I was told, lay in a dying state for want of breath. I saw her five minutes after she was attacked, and never before did I observe the difficulty of breathing so great, the croaking so loud, or the fever so high. I immediately took six
 ounces

ounces of blood from her arm, which appeared very black, and proved uncommonly fizy. She got a vomit, drank plentifully of cold water, and the next day was as well as usual in every respect, except that she felt herself weak.

C A S E XII.

Nov. 10, a child, five months old, after having been duller and hotter than common the day before, was attacked with the Croup. He had been ill an hour before I saw him, which was at nine o'clock in the evening. 29, he was very feverish, and had coughed frequently; his mouth appeared full of saliva. I ordered two leeches to his throat, and sent him a grain of calomel and some laxative infusion. 11, he had bled the greatest part of the night; he had had some sleep, during which he breathed loud and with difficulty: but when I saw him again, he appeared free from fever, and his breathing tolerably good. He took nitre
and

and the pulvis antimonialis of the London Dispensatory, which now and then produced vomiting, and he was perfectly well in two or three days.

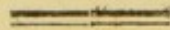
C A S E XIII.

March 12, a boy, four years old, of remarkable spirits and healthy constitution, upon getting wet, was seized with the symptoms above described, and which it is needless here to repeat. Four leeches were put on his throat, and two on his hands: He had a vomit given, which operated well. In the evening, and after the leeches had bled several hours, he was much relieved. His countenance from having been flushed, became very pale; he expectorated freely much viscid mucus. He had the infusum nitrosum, with pulvis antimonialis, given him several times a day, for two or three days, and he recovered, in a short time, both his health and spirits.

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It should be remarked that, in all these cases, it was directed, that the body should be kept particularly cool, and that cold water, lemonade, apple tea, or some other such weak liquid only, should be taken.



Appearances on Dissection.

I never myself attended but one dissection of a patient who died of the Croup.—In this case the appearances exactly corresponded with those related by Dr. Home. The internal surface of the trachea was covered with a white membranous crust, and its upper part was observed to be red and inflamed. The inferior part of it and the whole length of the bronchiæ were full of a soft, whitish, purulent matter, which had not yet acquired the consistence of a membrane. This matter seemed likewise to pervade the minute ramifications of the bronchial

chial

chial vessels, through the whole course of the lungs*. None of the viscera seemed inflamed or ulcerated, neither did any other appearance of disease present itself to our inspection. Dr. Baillie, speaking of the dissections of those who have died of this disease, concludes the subject with the following words: “ When the inner mem-
 “ brane of the trachea is inflamed, it is
 “ sometimes lined with a layer of a yel-
 “ lowish pulpy matter. This does not ad-
 “ here very firmly to the inner membrane,
 “ but may be easily separated. It extends
 “ from the upper part of the cavity of the
 “ larynx into the small branches of the
 “ trachea, which are distributed through
 “ the substance of the lungs. There is, at
 “ the same time, a good deal of mucus in
 “ the trachea and its branches, together
 “ with a mixture of pus†.”

Of

* These appearances presented themselves upon the dissection of the patient mentioned in Case VI, a girl eight years old, and who died in twenty-fours from the attack.

† Vide Baillie's Morbid Anatomy, p. 56.

Of the Cause of the Croup.

A diversity of opinions have prevailed respecting the proximate cause of this disease. Boerhaave considered it as purely inflammatory. Dr. Home divides it into two stages; in each of which the state of the part affected is different. The first stage he calls the inflammatory, the second the purulent. Others again, with Dr. Rush*, regard it as a spasmodic affection solely, and Dr. Johnstone, in his remarks on the angina trachealis, assigns no less than three different causes of the Croup, viz. inflammation, spasm, and putrid acrimony.—The most simple theory which can be given of a disease, provided it will account for its symptoms and explain its phenomena, is surely the best. It is equally unphilosophical as unsatisfactory, to apply more causes than are necessary to the solution of one and the

* See his Letter to Dr. Millar, on the Spasmodic Asthma of Children.

the same effect ; such a mode of reasoning, precluding the possibility of forming a decisive judgment in medical cases, and introducing new doubts and new difficulties into the system of physic. It is owing to this strange propensity to multiply causes, that such a prodigious number of remedies are recommended for the removal of the same complaint ; different causes necessarily implying different indications of cure. In proof of the truth of this remark, a number of instances may be adduced.

Physicians, formerly impressed with the idea of nature curing diseases, thought that the art of medicine consisted in an endeavour to second her effects, and assist her in the accomplishment of her purpose, where her own powers were insufficient. Hence in measles and small pox, regarding the extraordinary actions raised in the system, as means employed by nature for ridding herself of the contagious particles, they directed the body to be kept hot, and warm drinks to be administered. Hence, also, in
acute

acute rheumatism and erisipelas, heat was to be applied constantly to the parts affected, lest, by exposure to cold, those particles, which nature had been so solicitous to expel, should be again driven back into the body. And, as if they had not yet given sufficient latitude to the exuberance of their imaginations, in inventing hypotheses, they had recourse to secondary causes, equally vague and conjectural, to explain the phenomena of these diseases. Concoction, acrimony, fermentation, putrescency, lentor of the fluids, spasm, and the like, have severally been maintained to operate as causes; nay, in the estimation of some, several of these have co-existed and acted in concert, in the production of the same complaint.

Had the physicians of those days, instead of building their theories on so unstable a basis, consulted facts, and reasoned from these alone, they would have found that the heating regimen was universally prejudicial, and that so far from there being any danger
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to be apprehended from the application of cold, that it did service, in proportion to its influence in diminishing the fever and eruption, effects which it had been their utmost care to obviate.

Whoever examines attentively Dr. Cullen's theory of fever, cannot but admire the ingenuity of his doctrine; but, setting aside every partial consideration, he must see reason to regret that it is so blended with hypothesis, and so replete with contradictions. How directly debilitating powers, by inducing a state of debility, can prove an indirect stimulus to the sanguiferous system, and, by the intervention of a cold stage and spasm connected with it, increase the action of the heart and arteries, is more easy to be expressed than understood. And that this increased action should continue, till it has restored the energy of the brain and that of the extreme vessels, thereby overcoming the spasm affecting them, upon removing of which, the excretion of sweat, and other marks of the relaxation of the excretories
take

take place*, abounds with ideas so visionary and inconsistent, that it requires but a very small portion of critical acumen to detect their fallacy. Dr. Cullen, moreover, tells us, that the spasm is the effect of the vis medicatrix naturæ to remove the debility, and, afterwards, recommends us, as a primary indication of cure, to moderate the the violence of re-action.

“ Now if spasm, and the consequent
 “ re-action, be an effort of nature to re-
 “ lieve the debility, why, at the same
 “ time, obviate that very power which is
 “ operating towards the removal of the
 “ disease.”

Neither is the second indication, viz. to remove the causes or obviate the effects of debility, less objectionable than the first. It is, in fact, in direct opposition to the principle inculcated in the former; for surely any power which moderates or diminishes

* Vide Cullen's First Lines, vol. i. p. 102.

minishes action, can never remove debility ; debility itself consisting in a diminution of action ; so that, on the contrary, we may assert, that no power can remove a state of debility, but what operates by an increase of action.

The third indication, mentioned by the Doctor, is, to obviate or correct the tendency of the fluids to putrefaction. Granting, even with the author, the existence of a state of the fluids, in fever, tending to putrefaction, this state could only be prevented, or removed, by the means recommended to be used in the preceding indication, viz. by removing the debility, or, in other words, increasing the tone of the system.

But it is now become, very generally, a subject of doubt, whether it is possible that a tendency of the fluids to putrefaction, can exist during life ; and it appears that all those signs, by which physicians were induced to believe such a state of the fluids to

be present, are merely so many indications of great weakness, and are removed by powers which give strength and tone to the body.

I have thus digressed, for a while, from the particular object of the present treatise, in order to adduce a few instances of the pernicious effects of multiplying and confounding causes, in accounting for the phenomena of diseases: I say pernicious, because they evidently tend to mislead and cramp our judgment, and render our practice inert, uncertain, and contradictory.

What I have said, applies exactly to the disease in question. For if, according to Dr. Johnstone, the Croup may be either inflammatory, spasmodic, or may consist in a putrid acrimony, how can it be expected we should arrive at any decisive knowledge of the proper method of treatment, when the nature of the disease is so difficultly ascertained, or consists sometimes in one state, and sometimes in another?

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The first and most necessary step towards curing a complaint, is a knowledge of its nature or cause; without this we labour in the dark, we prescribe at random, and chance alone determines the success of our practice. In order, therefore, that when we come to speak of the treatment of the Croup, we may have availed ourselves, as much as possible, of the advantage to be derived from a knowledge of its cause, I shall proceed to investigate, what is the most probable opinion upon this part of our subject; in doing which, I shall endeavour to shew that it depends neither upon spasm nor putrid acrimony, but is to be considered as a simple inflammatory affection of the trachea.

When we reflect, that the greatest part of the diseases of children are manifestly of an inflammatory nature, that the Croup commonly makes its appearance at those seasons in which inflammatory complaints prevail most, and, likewise, that the body, at this tender age, is less capable of resist-
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ing the action of those causes which produce it, than at a more advanced period of life,—we must acknowledge, that there exists in children a strong predisposition to be affected with it.

The influence which the state of the air exerts upon the animal fibre, is probably far more extensive than is generally admitted. There is, perhaps, not a more common remote cause of disease, than cold combined with moisture; and there are few, comparatively speaking, who have not, during some part of their lives, experienced the bad effects of passing suddenly from a cold atmosphere into a warm one, or vice versa.

In childhood these causes should act with double force, the irritability being proportionably more abundant; and, in fact, we find this to be the case. On this account it is that so few live to their tenth year, without having suffered from the contagion of small pox, measles, and whooping cough. To the same cause is owing the
fever

fever so often produced by dentition, and that which is frequently the effect of worms irritating the intestinal canal. It is not, therefore, surprizing, that the muscular fibres of the trachea, and of the vessels which penetrate its coats, partaking, in common with the rest of the body, of this excess of irritability, should be subject to the operation of those causes which we see produce inflammation in other parts.

I have seen some instances, when the Croup has been brought on evidently from the continued application of cold; others, when it has been preceded by alternations of heat with cold; and others again, in which it originated from long exposure to wet. One case occurred to me, in which it succeeded an inflammatory angina tonsillaris, and proved very tedious, but yielded at last to repeated bleedings and antimonial medicines. But very often it has come on without any of these causes being applied; neither, after the most diligent enquiry, could

could we discover any manifest cause to which the disease might be referred,

The circumstances, which have induced some authors to believe the Croup to be a spasmodic affection, are chiefly the following :

First, It has been remarked to have evident intermissions*, during which the patient breathes freely, and little pyrexia is present.

Secondly, Because the paroxysms have been prevented, and the disease cured by stimulants.

Thirdly, Because in some children, who have been supposed to die of the Croup, the

* This, however, is a very rare occurrence in the Croup, especially in the more strongly marked cases of that disease. Neither Dr. Home nor Dr. Cullen, in the course of their practice, ever noticed any thing like an intermission in the symptoms.

the trachea has been found, on dissection, to have been perfectly free from any marks of inflammation or purulent secretion.

I shall answer each of these arguments singly, beginning with the first.

That an intermission of the symptoms of an acute disease, does not necessarily argue a state of spasm, is proved from the phenomema of phthisis pulmonalis, a disease very generally allowed to be of an inflammatory nature. We see here evident intermissions of both pain, cough, and fever, and yet we do not infer that phthisis is a spasmodic affection.

There is reason to believe, that epilepsy, in some cases, depends upon an increased impetus in the vessels of the brain, and consequently, is an inflammatory disease; yet the intermissions in this disorder are sufficiently apparent.

Secondly,

Secondly, Granting that a spasmodic action of the glottis or larynx did exist, it still remains to prove that this is the cause of the disease. Now spasm cannot exist in a part independent of some irritating cause, acting with more force than usual; and it would be difficult to find any cause adequate to produce it, except the inflammation which we suppose to be present, and the existence of which we have proved in an hundred instances.

I conclude then, that the inflammation seated in the trachea, proves an irritating cause to the muscles of the glottis and larynx, by which the latter are thrown into more rapid contractions.

But it is an acknowledged fact, that stimuli, in proportion as they excite action, exhaust the irritability, and render the fibre less disposed to contract. The irritability, therefore, of these muscles being exhausted by repeated contractions, the irritating cause ceases, for a time, to excite them; and
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hence the intermission, whilst the original inflammation is so slight, as not of itself to be adequate to the production of the symptoms. Hence also we see the reason of the renewal of the paroxysms, when by the recovery of the irritability, the irritating cause is again enabled to propagate its stimulus, and excite new contractions*. Moreover, we know very well, that inflammation produces various effects, according to the violence of its degree, and the peculiar organization of the part attacked with it. Adhesion, suppuration, and gangrene, each of these, under different circumstances, succeed inflammatory affections.

That gangrene is the effect of very violent inflammation, none, I presume, will deny; suppuration appears to be the effect
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* On this principle must be explained, all the periodical motions of the body, the return of appetite, and the causes and effects of sleep; the menstrual discharge in women, the phenomena attending intermittent fevers, &c. &c.

of an inferior degree; adhesion of a still less: And is it not equally reasonable to conclude, that a certain degree of inflammation, attacking muscular parts, may occasion a spasmodic action of their fibres, on the same principle upon which any other irritating cause, sufficiently powerful, is observed to produce it.

And that inflammation does, in certain cases, produce spasm, is clear from the convulsions which sometimes follow amputation, and from symptoms of tetanus succeeding a lacerated wound. As to the small degree of fever, which is said to accompany this state of the Croup, it is owing to the comparatively small degree of inflammation in the trachea; for where the latter is very great, the former is increased in proportion.

In these cases, therefore, in which an intermission is observed, I conclude that this depends upon the exhaustion of irritability, in those muscles which are spasmodically

dically contracted; that the return of the paroxysm depends upon a renewal of irritability; and that the original cause of the spasm, and, of course, of the disease, is the inflammation existing in the internal coats of the trachea.

The second argument, to prove the Croup to be a spasmodic disease, is, that it has been cured by stimulants.—To this I shall object,

First, That in the generality of those cases, which appeared to have yielded to this class of remedies, bleeding had been previously practised*.

Secondly, There are few well authenticated cases of Croup upon record, where the disease was cured by stimulants. The latest and most accurate authors agree, as we shall find hereafter, in recommending
blood

* Vide Dr. Rush and Dr. Chalmers on the Treatment of this disease.

blood letting and other evacuations to be used.

The third argument seems to carry little weight with it, as in by far the greater number of cases which have fallen to the observation of different authors, a preternatural affection of the trachea presented itself upon dissection.

Dr. Rush* mentions a case, of a child, three years old, who died of the Croup. Not the least mark of inflammation, or increased secretion, was discovered in any part of the trachea or bronchiæ; a strong adhesion of the lungs to the left side, was the only morbid appearance that presented, “Hence,” he concludes, that “the disease
“is occasioned by a spasm upon the ex-
“tremity of the bronchiæ. I am the
“more inclined,” says he, “to this opi-
“nion, from one circumstance, that upon
“introducing

* Vide his Letter to Dr. Millar, on the Spasmodic Asthma of Children.

“ introducing a blow-pipe into the trachea,
 “ we found uncommon difficulty in infla-
 “ ting the lungs.”

It seems to me tolerably clear, from the account Dr. Rush has given of the preceding disease, that it was by no means to be considered as a case of Croup. In the Croup it is well known and universally allowed by physicians, that the part immediately affected is the trachea. In this the seat of the disease was in the lungs. In the one death is produced by an obstruction to the passage of the air, in its course through the trachea. In the other, death ensued in consequence of the adhesion formed in the lungs, obstructing the circulation.

The Croup is acknowledged to be, a disease which quickly terminates either in recovery or death; but persons have been known to live a long time with adhesions in their lungs; and Dr. Rush himself observes,
 that

that the disease alluded to, had been of long standing.

According to Dr. Home, the proximate cause of this disease is a preternatural, white, tough, thick, membranous crust, covering the inside of the trachea. But here he evidently mistakes the effect for the cause; this membranous crust being merely the effect of the inflammation existing in the trachea.

Dr. Home acknowledges this preternatural substance to be an exudation from the blood, and to consist chiefly of the coagulable lymph, deprived of its thinner parts. But we have no instance of an increased extravasation of this fluid lining secreting surfaces in any other part, without previous inflammation or increased action of the vessels. And the Doctor himself divides the Croup into two stages; the inflammatory and the purulent; which is as much as to say, that the one precedes the other; and, therefore, that the latter is the effect of the former,

former. To assert then, that the membrane is the cause of the disease, when, at the same time, he acknowledges it to be secondary to the inflammation, and produced by it, is manifestly a direct contradiction; unless, indeed, he means to deny, that the disease existed previous to the formation of the membrane.

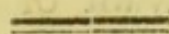
On this account, I entirely coincide with Dr. Cullen, in attributing the disease to an inflammatory affection of the mucous membrane of the larynx and trachea. This inflammatory affection, I call, the proximate cause of the Croup.

This opinion is supported by all the evidence, of which the nature of a subject of this kind will admit. For whether we regard the symptoms which constitute the disease, whether we advert to the causes which induce it,—to the appearance which the blood drawn from a vein uniformly exhibits,—or take into consideration those remedies which cure it,—we shall find equal
reason,

reason, from each of these sources to confirm us in our idea. Moreover, if we add the appearances, almost invariably discovered upon dissection, in the cases of those who died of the Croup, we cannot, I think, any longer admit a doubt of the foregoing theory,

The symptoms are, for the most part, such as occur in other inflammatory complaints, and indicate an increase of action in the system. The causes, which remotely operate in the production of the disease, are clearly those which bring on inflammatory disorders in other persons, and in other parts of the body. The size of the blood evidently denotes an increase of action in the vessels; and the disease is cured, as we shall hereafter shew, by those means which are successfully employed in the removal of other inflammatory affections. And that the exudation of coagulable lymph, which in the latter stages of the Croup most generally takes place, is to be referred only to this state of the body, will, I presume, be denied

denied by none ; unless an instance can be adduced of a similar exudation from a secreting surface in any other part of the body, taking place, independent of previous inflammation.



Of the Cure of the Croup.

Having, in the preceding section, investigated the nature of the Croup, and endeavoured to establish, by a train of reasoning consistent with fact and observation, its most probable cause ; I shall now consider the indications of cure.

This has been thought to be a disease from which few have a chance of recovering, and that, unless means are used in the beginning, our utmost efforts will, in the greater number of cases, be unavailing.

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This supposed difficulty seems to me to originate chiefly from the three following causes.

I. From too long a delay in the use of the necessary remedies.

II. From the want of perseverance, on the part of the practitioner, in the application of those remedies.

III. From the too common practice of mixing together, or employing successively, medicines of a different operation.

There probably is no disease, with which we are acquainted, that requires more the interposition of art, than that of which we are at present speaking. The suddenness of its attack, the alarming progress of its symptoms, and the celerity with which it sometimes terminates in death, sufficiently evince the danger of the shortest delay. But when we are called to patients labouring under this complaint, it
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is our duty, not only to see that our directions are instantly complied with, but we are to persevere in our efforts, however seemingly fruitless they may appear at first, and resolutely persist in the continuance of that plan, of the propriety of which we had every reason to be satisfied, till such time as we see some evident change or other to have taken place.

The case is in general desperate; as the disease advances it becomes more so; and we know, that though slight inflammations may be removed by mild remedies, yet those of a more inveterate kind are only to be subdued by very powerful ones, continued for a length of time. Neither, upon finding little or no relief from the medicines that have already been used, are we hastily to conclude that we have mistaken the theory of the disorder, that we have proceeded upon a wrong plan, and that we must now have recourse to remedies of a different operation.

It

It is too often urged, as a reason for changing our practice in the cure of diseases, that because one set of medicines have proved ineffectual, others, of an opposite tendency, must do good*; and since
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* This reasoning, however, in certain cases, and to a certain extent, still holds good.—It was in this manner that the late illustrious Dr. Brown reasoned, respecting the Cure of the Gout. He had been afflicted with it himself frequently, and had very long and severe attacks, notwithstanding he studiously adhered to the antispasmodic plan, in every respect. Finding that the complaint rather increased than otherwise, he began to doubt the propriety of the means which had been adopted, and to conclude, that an opposite plan of treatment might produce a different, and, of course, a better effect. He lived well and took stimulants; from which time he became better, and continued ever after to be less severely afflicted than before; the fits were both much more speedily carried off, and he was much less frequently attacked by them. In this manner, likewise, he reasons respecting the nature of the Croup: The following are his own words on the subject.—Speaking of the symptoms which characterize the disease, he says,

“ Consider which of these sets of signs precede or
“ accompany the Croup: and whether its pyrexia be
“ sthenic

in diseases which we suspected, at least, to be of a similar nature, we have found these means

“ sthenic or asthenic. Weigh the different sentiments
 “ of authors upon the subject; suspect their theories,
 “ but their facts still more. Be on guard not to be mis-
 “ led by the vanity, emptiness, and rashness of young
 “ physicians, as well as by the obstinacy and bigotry of
 “ the older sort, that increases with their age and prac-
 “ tice, to be bent by no force of reasoning, no weight of
 “ truth, scarce by the power of God: regard their
 “ minds as bound in the fetters of prejudice, remember
 “ that a whole age of physicians were in the wrong, ex-
 “ cept one man, and persisted obstinately in their error
 “ in the case of the alexipharmic physicians; and reflect
 “ within yourself, good reader, whether the present phy-
 “ sicians, who follow the doctrines delivered in the
 “ schools, judge better than their predecessors, and do not
 “ run into the contrary extreme of madness, doing as
 “ much mischief in fevers, and diseases of pure debility,
 “ as they did in sthenic diseases, and, in fact, take a
 “ wide range of spreading destruction among mankind.
 “ Thus secured against mistake, consider the cures of the
 “ disease that have appeared. If in these or any trial
 “ you may make, you shall find that either bleeding and
 “ purging or antispasmodics, as they are called (that
 “ is, stimulants), succeed, then be assured, that in the
 “ former case the disease is sthenic, in the latter asthenic,
 “ of which you will still be more certain, if you find
 “ that

means to have answered the purposes designed, we must, in all probability, have mistaken the nature of this complaint, and, therefore, we shall find an advantage in pursuing an opposite course.

But nothing can be more fallacious than this kind of reasoning, carried to such an extent.—On the same principle, we might argue, that because we do not always cure peripneumony, the disease, in these cases, was not inflammatory, and that it might have been cured by an opposite treatment; or that, because we cannot invariably succeed in the removal of tetanus or colica pictonum by opium, we entirely mistook the nature of these complaints, and that we might have cured them by bleeding and evacuations*.

We

“ that the exciting hurtful powers and symptoms, which
 “ have been enumerated, agree with the other marks of
 “ judgment.”——*Vide Element. Medicin. vol. ii. p. 100.*

* I esteem it but justice to mention, that I once knew a case of a locked jaw, induced by a lacerated
 wound

We must, therefore, notwithstanding every unfavourable symptom that might present itself, act with determined vigour, and rigorously adhere to our original plan; bearing in view the cause of the disorder, and the state of the part immediately affected. Supposing even the secretion of the coagulable lymph to have taken place, and to be still going on, we are sensible that it is an effect of the existing inflammation, and that, in order to remove the one, we must moderate the other; for we shall in vain expect the effect to cease before the cause is taken away.

We

wound of the nose, perfectly and speedily cured by bleeding, after large quantities of opium and other antispasmodics had been tried to no purpose. The patient, a woman, about forty years of age, finding no relief from what we had done for her, was advised to consult another practitioner, who, upon seeing her, immediately took away a large basin of blood from her arm, which relieved her very sensibly: The operation was repeated once or twice afterwards, and the woman perfectly recovered.

We should, likewise, be particularly guarded against the too common error of joining together medicines of different operations. By this means we destroy the good effects which might be expected separately, to result from each; or rather, the one counteracts the action of the other; or we form a compound which possesses a very different mode of action, from what we had intended to produce, or from that which each of its constituent parts possessed before their union.

Such a practice as this, continually involves the practitioner in the most anxious state of uncertainty and doubt, and entirely prevents him from making those deductions and inferences, in the course of his observations, which might very greatly assist him on future occasions.

I now pass on to the particular consideration of those remedies, which are to be employed in the cure of the Croup.

From

From my own experience, confirmed by that of others, whose success has corresponded with mine, I hesitate not to rank bleeding, amongst the first and most necessary of all other remedies. In many cases, I am convinced, this alone will succeed without the assistance of any other medicine whatever. Indeed so positive are most authors, who have written on the subject, of the indispensable necessity of blood-letting, that even those who regard it as a spasmodic disease, nevertheless advise this evacuation previous to the use of medicines*.

In very young children (and it is those who suffer more than others from this complaint,)

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* Dr. Chalmers, in his account of the weather and diseases of S. Carolina, speaking of the cure of the suffocatio stridula, after having endeavoured to prove it to be a spasmodic disease, recommends, as a primary indication of cure, blood to be drawn from the jugular veins.— I have before mentioned the practice of Dr. Rush and Dr. Millar in those cases. Both these physicians advise blood-letting in the first instance,

plaint,) topical blood-letting must be used. Leeches applied to the throat, appear more serviceable than when put on the hands or feet; their effect is generally more immediate, and the patient sooner begins to breathe with less difficulty.

I have invariably remarked, the longer the orifices continued bleeding, the more effectual was the relief obtained.

In some of the cases before related, and in others which I might mention, did I not wish to avoid prolixity, the bleeding has continued for twelve or fourteen hours. The patients, of course, entirely lose all colour, and the countenance, from a florid red, becomes of a deadly pale hue. This I am always pleased to observe, as it affords a proof that those symptoms which threatened the greatest danger are removed, and the child, in general, soon recovers its former strength and vivacity.

No hazard is to be apprehended in these cases, from taking away too large a quantity of blood; the danger is lest we should not take enough; and, therefore, if a manifest relief in the breathing does not follow the application of the leeches, after the orifices have bled some time, and if the fever is not abated, recourse must be had to more leeches, and these may be put upon the hands or feet as well as upon the throat. Where it is practicable, opening a vein is preferable to the topical application of leeches; the blood is evacuated more suddenly and in a greater quantity, and the relief procured is commonly more speedy and effectual.

Dr. Home denies the possibility of bleeding being of any advantage in the second stage, as he calls it, of this complaint, or where the purulent membrane is formed. In fact, he candidly confesses that, in this stage of the disorder, nothing can be done with any prospect of success.

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When any considerable secretion has been formed, we have, indeed, much reason to fear that no means, with which we are acquainted, can be of any service. But if it be collected in a small quantity, and has not yet acquired the firmness and tenacity of a membrane, we may surely conceive hopes, that the quantity thus collected may be expectorated along with other mucus, and that, if by the continuance of the debilitating means we have employed, we can abate the inflammation, and thus prevent the secretion of fresh matter, we may at last succeed in curing the disease.

What then is the best method of promoting this expectoration? The fetid gums, the volatile salts, squills, the aqua ammon. acetat. &c. have been commended as excellent expectorants. But daily practice proves the precariousness of these remedies, not only in this but in other disorders, where a similar effect is wanted to be produced. Besides, on account of their nau-
seousness,

feoufnefs, it is difficult to get children to take them.

It appears to me that vomits anfwer this intention better than any other clafs of medicines. Their operation is not confined to the ftomach alone, but is readily communicated from the æfophagus to the larynx, and large portions of infpiffated mucus are often difcharged, at the fame time, with the contents of the ftomach. It is when this effect is produced, that relief is moft effectually obtained from the exhibition of emetics. Tartarized antimony is the beft form in which thefe can be adminiftered; it is much lefs offensive to the palate than either fquills or ipecacuanha.

Befides bleeding and vomiting, it is generally neceffary to employ purgatives. Sometimes the antimony operates by ftool, and, in thefe cafes, its effects are particularly ferviceable. Where, however, this is not the cafe, it will be proper to have recourfe to fome purgative medicine. Calo-
mel

mel is taken with little inconvenience by patients of all ages, and if it is not sufficient to procure evacuations of itself, its operation is rendered easy and certain by giving, afterwards, some infusion of senna, with manna or cream of tartar, and repeating it, at proper intervals till the effect is produced.

Blistering the throat is likewise useful, and, when the relief procured by bleeding has not been very great, it becomes absolutely necessary. But in a number of cases the bleeding has been found sufficient, and a blister should never be applied, till some blood has been previously lost.

After these means have been tried, and some abatement of the symptoms has been obtained, it is necessary to guard against the return of inflammation. This is best done by keeping the room, in which the patient is, cool and airy, by allowing him nothing but water and acidulated drink, and giving him, now and then, a powder, composed
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of half a grain of calomel and a few grains of nitre.

Calomel is certainly a powerful remedy of inflammation. Exclusive of its effects in diminishing the tone and action of the muscular fibre, it appears to exert a particular influence on the blood, rendering it more florid, thinner, and less disposed to coagulate. Pulvis antimonialis seems also to possess nearly a similar effect, with this difference, that it has a more powerful determination to the skin. Given in the smallest doses it sometimes excites nausea and sickness, by which some physicians imagine the pyrexia is lessened, and the circulation rendered slower. Whatever be the peculiar mode of its action, thus far is certain, that it diminishes the power of the heart and arteries, and, on this account, is proper to be used in all those diseases where the circulation is morbidly increased, and a considerable degree of pyrexia prevails.

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I have had no experience of the effects of fomentations, or the inhaling the warm steams of vinegar and water, a practice which has been recommended in this disease. I have constantly had in view the removal of inflammation, which is best promoted (as I have urged before,) by the timely and persevering use of directly debilitating powers. Our chief dependence, therefore, should be, first, upon bleeding, by which the inflammation may be cured, and the deposition of coagulable lymph prevented; and, secondly, on vomits, by which the lymph already secreted may be expelled, and the fauces cleared of all that mucus, which they are so peculiarly prone to generate at this time.

Sudorifics have been occasionally advised in the cure of this disease, and with this intention, amongst other remedies, opium, either by itself or in conjunction with ipecacuanha or antimony, has been given.

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The operation of all such medicines is extremely uncertain, and where they are employed without producing the desired end, cannot fail to be prejudicial. Opium, in particular, on account of its highly stimulating properties, must be totally improper. Instead of procuring rest and affuaging the pain, it will aggravate the febrile symptoms, and by adding to the sum of irritation already inordinately increased, may occasion convulsions, or even death itself, by a complete exhaustion of irritability.

There may indeed some plea be urged for its use, in that particular species of the Croup, where there are distinct and regular intermissions. One case of this kind I have had an opportunity of observing, and it is the only one I ever met with. The exhibition of opium, in this instance, appeared at first, and for some time afterwards, to be attended with advantage, though the disease, after repeated attacks, proved fatal.

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Should

Should another case of this kind occur to me, I should be inclined to pursue an opposite mode of practice to that which I there adopted. Regarding the paroxysm, and the spasm accompanying it, solely as the effect of inflammation, I should still adhere to those means, the success of which has been so amply manifested in the other and more ordinary cases of the Croup. There may not, perhaps, be that necessity for applying them to so great an extent, because the degree of inflammation present, in this state of the disorder, is far less than that existing in the others. But if means less active, though similar in kind, may be adequate to the removal of the disease, these, nevertheless, are to be persevered in for a length of time, which circumstances alone can determine, and are to be omitted cautiously and gradually.

It has been supposed, that in cases which have resisted the common means of relief, bronchotomy should be tried. This, however,

ever, is merely a suggestion; neither does it appear to have been practised in a single instance, even by those who were the strongest advocates for it. And, I think, we may reasonably conclude, that from the uncertainty of the extent of the inflammation, and the danger as well as the difficulty attending incisions in this part, not the smallest hopes of success can be entertained from the operation.

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