On Crouch

by

I. Henry Hughes

A good essay.
The disease which is the subject of this Paper has been described by authors under different names. In our own language it has been called Grouph, supposed to be derived from a Scotch word signifying to croak or cry with a hoarse voice. In some parts of England it has been popularly called "the rising of the lights" and in the West of Scotland cloth or shuffling. In the provinces of New Jersey and Pennsylvania it has been known under the names of Bladder
in the throat or larynx.

The following are some of the synonyms: Angina Infantis (Wielke), Cynanche nel Angina Trachealis (Cullen), Suffocation Stridula (Home), Modus Magnuscitum (Starr), Angina Polyposa (Michaelis), Trachealis Infantum (Albers and Frank).

Although doubts have arisen in the minds of many as to whether Croft was known to the ancient physician, yet I cannot but think that upon consulting the writings of Hippocrates, Galen and of Aris, we find allusions to this disease. For manifestly, the same causes which combine for its production must have existed formerly as they do at present and it would appear very extraordinary that they should have remained inactive and as it were dormant during a long period of years. It breaks out at length with an energy as fierce as sudden. But there is very probable, namely, that at a period when post-mortem examinations were uncommon, Croft was confounded with other forms of disease affecting the throat and air passages.
and medical men had not the opportunities of satisfying themselves as to its principal feature. I allude to the formation of that adenoidal membrane, which is generally found lining the larynx and trachea.

Under the title of Affectio Orthostomica, Bailly in 1576 speaks of an epidemic, affecting the respiratory passages which was at that time raging in Paris, but with the nature of which he was unacquainted. We now recognize the disease he spoke of, as possessing all the characteristics of croup.

Martin Senni in 1748 described it as it appeared in an epidemic form at Cremona in the north of Italy under the name of Angular Strepitosa. Hare in the Philosophical Transactions for 1749 as it occurred in Cornwall, and Wicke observed it in Sweden during some years preceding 1764, but we had no detailed account of it until the work of Storrie appeared in 1765 entitled "Enquiry into the nature, cause, and cure of the Croup." He says at the commencement of his monograph, "How so singular and dangerous a disease has been totally neglected.
while such attention has been paid to most others, is not the least surprising circumstance about it. Its external features ought to have been sufficient to have aroused an inquisitive search into diseases, its internal appearances if but once seen must have raised from their singularity the strongest desire to investigate its nature." After the essay of Home appeared it received a place among specific diseases, and became the subject of a number of works and even of controversial discussions. Among those who wrote on this disease, were the following, Crawford, Michaelis, Bock, Portal, Cullen, Vincentius and many others. It is to the Emperor Napoleon Bonaparte, that we are indirectly indebted for the great advance in our knowledge of the treatment and pathology of the complaint during the remarkable epidemic which occurred in the years 1805, 6, and 7 extending over the greater part of central Europe, the Crown Prince of Holland, the Emperor's nephew and also a near relative of the Empress Josephine, fell a victim to this disease. To the profound regret of all his relatives, and it-
Wool in diseases of infancy and childhood.
was thus that gave rise to the emperor's offering a prize for the best essay, to which we are indebted for many of our most valuable works on burnet. The prize being divided between M. Albert and Junius.

The course of this disease has been divided by authors into different stages or periods, more with the view of giving precision to their description, and to the treatment recommended than from any marked change in the character of the pyrexia.

M. Jölih has divided it into three stages, namely, 1st the inflamed or catarrhal stage, 2nd the inflammatory period, 3rd the stage of albuminous exudation, and 4th the period of imminent suffocation.

Dr. West divides it into three stages, and this is the scheme I shall adopt.

In the first-stage, the pyrexia is hardly to be distinguished from ordinary catarrh, and the cough presents no pathognomonic sign. It is with propriety called the stage of invasion. Occasionally the precursory signs are of a very light nature and chiefly of a febrile
description and attract—but little notice.—
In addition to the pleuritie symptoms, there is
often present, a short cough, lassiness, sneezing,
erypro and all the signs of common catarh.
Upon examining the pleurisy, no trace of
inflammation can be detected, but the tongue
is generally white. Many authors pay
particular attention to the precommunic symptoms
but these are not at all constant and may
be only the commencement of a cold, and
there is no symptom which can be relied
upon as indicating its approach, until the
disease is nearly fully formed.
The duration of this stage is very variable, nor
is there any regularity in the mode of its
transition into the second stage.—
In the second stage, the character of the cough
becomes altered and is attended by that
peculiarity sneezing sounds so characteristic
of the disease. The patient becomes feverish
and fretful, and sometimes caused with
irritation, and if able will complain
of pain in the head. The cough is short
convulsive, sneezing and is followed by a
and crowing inspiration. The pulse is hard, high, and frequent, often being as 170 or 180 in the minute, the face becomes red and flushed, the breathing more frequent, hurried, and the child panting and perspiring. During the night frequent short fits of coughing, sweat, restlessness, sneezing, about the throat, evinced by frequent applications of the little patient's hands to his situation, manifest themselves.

The tongue is foul and dry, and covered with a yellowish film, and the appetite for food is entirely lost. Throughout the whole course of the disease there is a tendency to nocturnal exacerbations and to remissions as the morning approaches. The paroxysms generally coming on whilst the patient is asleep. Most frequently the first is the least severe, and they increase in severity as the disease advances.

During the paroxysms, perspiration breaks out from every pore, and the veins of the head and neck become greatly distended. An interval of comparative rest precedes this state of suspension, the child falls asleep.
Through exhaustion, and during sleep, the stridor accompanying the act of inspiration is heard in an exaggerated degree. At the commencement of this stage the cough is generally dry, or sometimes attended by a quantity of mucus or purulent expectoration, subsequently it becomes husky and suffocative, with frequent attempts to execute what is called the Trachea.

The third stage or that of Collapse and threatened suffocation, may commence from the first to the seventh day from the invasion, according to the intensity of the disease and constitution of the patient.

The pulse now becomes small, weak, irregular, or even intermittent, and the cough may sometimes cease altogether, and when present is less frequent, less audible, suppressed, but suffocative. The head is thrown back as far as possible so as to increase the capacity of the Trachea, the chest is drawn violently at each effort to inspire, and the abdominal muscles cooperate energetically in respiration; sometimes the patient may obtain momentary
relief owing to the expectoration of a small portion of the albuminous and membranous matter obstructing the Trachea. When the excretion does not take place or is very scanty, and when the disease has advanced downwards through the bronchi the issue is very often fatal. In this case the child throws itself about in great distress, pries on objects around him and grasps them constantly for a moment, but its hand to the throat as if to remove an obstacle to respiration, while helpless, hopeless agony is depicted on its countenance. In the midst of these sufferings the title patient expires, or convulsions come on and close the scene. Such is the usual course of the mild pencil cases of common and uncomplicated red cough, when left to nature and minimally treated by treatment.

The duration of cough may be stated at from three to twelve days. Usually the disease will be found to run its course in from three to five days. Dr. Craigie observes that-
Cited in Watson's Principles and Practice of Physic.
Crémons is never prolonged beyond the twelfth day. In other instances the symptoms may come on very suddenly. A child may retire to rest apparently in its normal health and not laboriously under any ascertainable symptoms, and is awakened from a deep sleep by an attack of Crémons. Such cases often prove fatal in twenty four hours. Professor Jéquier of Geneva in his Essay on Crémons relates the case of a little boy, four years old, previously in the enjoyment of perfect health, who having gone out after overheated no one into the open air, or an extremely cold winter's day, was seized while walking with all the symptoms the most violent symptoms of Crémons and which proved fatal in fourteen hours.

Pathology

Age is by far the most important predisposing cause, as Crémons is essentially a disease of childhood, but it has been observed in adults as well as senile life. It is rare to meet with it until after the child has been married. But mention, however, records
Dictionnaire de méd et de cliniques pratiques part. I.}


The case of a child of a fortnight old, very feeble and small who died of well marked Croup. In Surrey state that he met with one instance of it in an infant of a few days old. Mollay notes that of a child who died at the age of one month in the desert part—a case which proved fatal at the age of three months.

The period of life for the maximum appearance of Croup is from the second to the seventh year. As little or none of Croup in the civil states in 1826 stated that Croup was as rare after puberty and in adult age as when it escaped the notice of many practitioners, who never doubted its existence at that period of life.

The annals of medicine contain few well authenticated instances of Croup, in public objects, who have escaped the eye of humanity, but the following are a few of the principal cases that I have been enabled to refer to. Graver mentions one which occurred to a lady 35 years of age who recovered and who had had an attack four years previously. Mr. Letson described a case which happened
Principles and Practice of Physie.

...du cerveau variqueux chez l'adulte...1824.
to a female aged 20 who died suffocated.
Dr. Mills of Dublin relates an example in the
case of a lady aged 20 which proved fatal.
Dr. Watson mentions the case of a girl aged 12
who was one of his Hospital patients and who died of it. Dr. Hosack relates two cases
in females both of whom recovered.

Another instance is related in the Lancet
for 1843 of a female aged 26 which proved fatal.
Dr. Jellett in 1850 read an interesting Paper
on Croup occurring in the adult before
the Medical Chirurgical Society in this City,
and which was afterwards published in
the Monthly Journal. Dr. Begg in 1861 read
before the same Society an account of a
case of Croup in the adult as a termination
of croup:

Louis in his memoir reported eight instances
of Croup in the adult. Conspiratively few
however of his cases were examples of the
disease occurring as a primary affection;
in the great majority the Croup was a
secondary affection coming on in the course
of pneumonia on the termination of some
“Des inflammations spéciales du Tissu Mousqueux et en particulier de la Diphtérie.”
other severe affections disease, by which the strength of the patient had already been greatly reduced.

Only one of the eight cases of diphtheria entitled simple cough, the rest being instances of the anginous complication inseparable the former as well as the larynx and Trachea and pertaining more of the character of that disease as ably described by Breson can under the title of Diphtherite.

Primary cough attacking the adult is profuse to be not so fatal a disease as when children are affected, owing partly to the greater width of the air passages allowing respiration which caused the notwithstanding a considerable amount of exudation, and partly from the greater strength of the patient enabling him to break up and thus get rid of the virulent secretion which sin the child is the purée of so great danger. And from which we arrive to this by means of practice, but too often in vain. No satisfactory reason has been assigned why it should be so frequent a disease.
Dictionary of Practical Medicine
of childhood and so rare as age advances. But it has been attempted to explain it as being due to the imperfect development of the organ of the voice before puberty. Dr. Stoke states that it is owing to the abundance of white tissues in young subjects. Dr. Wood of America thinks that we are to look for the main cause of the aforementioned phenomenon in the more treatable conditions of the nervous system generally in early life than in any other local cause.

Dr. Copeland remarks that the formation of false membrane is not so much the result of the atonic or aquatic character of the local action, as of the abundance of albumin and fibrin in the blood and the fact that the blood being in a more albuminuous state, then received confusion from some experiments made by Schick, who was able to induce the formation of false membrane in young animals by means of irritating injections.

The exciting causes seem in some instances to be involved in obscurity; the disease
making its appearance suddenly, and without any previous warning. -

In some particular situations, it is evidently more prevalent than in others; it is not so frequent in the Southern as in the Northern Counties of England, but it may be endemic in certain localities. We rarely meet with it near in high or hilly, or mountainous districts, but in low and moist situations it invades the most frequent and severe. -

Rubric and frequent vicissitudes of season and temperature seem to have considerable influence in its production. There also seems something like a predisposition to the disease in particular families, many members of which shall be preeminently attacked, whilst other children placed in nearly exactly the same circumstances are not exposed to local influences, diet, clothing, and general management, shall escape completely free. Male children are undoubtedly more liable to attacks of crumps than females.

From the Fifth Report of the Registrar General,
Павелъ в л. М.
it appears that while the deaths of males under fifteen from all causes are to the
death of females from all causes as eleven to ten, the deaths from crumps are as fifteen to ten.

Of two hundred and forty cases that came under public observation at Braunschweig, one hundred and forty-four occurred in males, and one hundred and five in females; and at Genoa under circumstances of observation, fifty-four males and thirty-seven females died of crumps between the years 1791 and 1808.

The epidemic prevalence of crumps has been contended for and denied by writers. Some consider it as entirely phthisical and accidental, others suppose that it may assume various forms and become epidemic concomitantly with cataractous epidemics, and that it has an office to such a character, whilst many believe, that it occasionally assumes an epidemic character, for instance, it was observed in this form at Cremona in 1747.
Harr in Cornwall in 1764, and in the years 1805-6 and 7 it assumed a most remarkable epidemic character having extended over the greater part of central Europe.

A question has arisen as to whether this disease is contagious? Several authors treat it only. Schenck, Sjöli, Sennert, Linnæus and others have brought forward facts to show that the disease may sometimes prove infectious. While this is not contradicted by Chevalier, Michaelis, Dohle, and other authorities. According to Dr. Cope, it has most unquestionably manifested this property when it has prevailed epidemically, and when associated with typhus fever, malaria, and other epidemic and contagious affections.

The prognosis of typhus is grave, and almost always uncertain, and is generally unfavourable, since the disease is unquestionably one of the most dangerous to which childhood is liable. Of the disease of breathing seen tremens, and the cough becomes looser and looser, attended with free expectoration, or vomiting of mucous tenacious matter, indica-
mingled with shreds of false membrane whilst the strength of the victim wanes, or the other home we begin to despair, when the discharge of the characteristic exudation does not take place, or when the expectoration of portions of it is not followed by any relief, when the countenance becomes livid or leaden, the eyes sunken, and the pulse very frequent, weak and irregular, and the other symptoms of vital exhaustion appear. The presence of Bronchitis, and still more of Pneumonia, add greatly to the dangers of the affection, and would seem sufficient to form a very unfavourable opinion of the chances of recovery.

Diagnosis.

Cullen made no distinction between Lycanche Trachealis and Lycanche Laryngea, but they were both grouped together by him under the title of Lycanche Trachealis, but they are easily distinguished from each other, and the difference between them appearing, when we compare the seat of the inflammation.
which belong to each disease. In Cynanche
Laryngea the symptoms are, uneasy sensation
in the Larynx, difficult and painful respira-
tion, internal swelling of the fauces, and
increasing difficulty of breathing. In Cynanche
Trachea, there is a difficulty of breathing
without any swelling of the fauces or painful
deflection. In the former the morbid appear-
ces are, inflammation of the mucous
membrane investing the Epiglottis and
margin of the glottis. Serum is effused
under it, or coagulable lymph on its exter-
ernal surface, by which the viva glottidis
is narrowed or closed. In the latter the mucous
membrane of the Larynx and Trachea is
inflamed, and a layer of lymph is formed
formed on its internal surface, from the
extremity of the Epiglottis to an indefinite
extent within the Trachea by which the
tube is narrowed or closed.

There is also another essential difference
between the two diseases, namely, that
whilst Cynanche Laryngea is seldom
met with except in advanced ages,
Eupneche Tracheali, as we have seen, almost always occurs in childhood.

Laryngitis or Stricture of anterior gullet is also apt to be confounded with true inflammatory chokes, and the differentiation between these two similar yet different disorders will be of the utmost importance, when we consider that those remedies which are employed at the outset of the inflammatory disease would be hurtful and mischievous in the other. In the former the complaint may be recognized by its sudden accession and as sudden disappearance; by the freedom of breathing in the intervals between the hemorrhages; by the absence of inflammation and pain, and consequently of any convulsio or other effusion from the mucous membrane of the air passages.

Diphtheria resembles Chokes, inasmuch as it leads to the production of a false membrane upon a mucous surface, and, as West regards it, as a variety of Choke, but it differs from the latter in consequence of the membrane not being so well formed, and is deflected
in patches, and a tendency to spread forward into the soft palate and into the mouth, back-wards into the oesophagus, sometimes into the larynx and seldom extending into the Trachea; the affection of the windpipe when it occurs at all being secondary; it not being limited to childhood and the fever that accompanies it being generally of an acute and hectic character.

Complications

May be complicated with Aphtae cut case of this description is rare. Mr. Furness has placed upon record two cases. Mr. Brièl has also inserted one in his clinical medicine. With clavicular metastases and this is one of the most dangerous complications. Burt’s sometimes comes on during the eruptive stage of measles, and is seldom very severe or dangerous. As the eruption becomes more abundant the eruptions generally subside. It may come on after the disappearance of the eruption, and then assumes a much more severe form, accompanied by edema of the larynx, often terminating in convulsions.
and suffocation.

With small pox, Fleil, Pinel, Virefrey, and Allers have particularly noted the association of cough with small pox. It is generally manifesting itself until the vesicles have arrived at suppuration. In a eruption a complete membranous tube is seldom found, but only fragments of false membrane.

With scarlatina, especially when the disease is associated with malignant sore Throat, cough is sometimes found in conjunction with acute Bronchitis and from the extension of the inflammation to the subtypes of the lungs, Pneumonia is very suprême.

Mucoid Appearance.

The chief mucoid appearances are always to be discovered in the Larynx and Trachea, and sometimes extending even to the smallest ramifications of the Bronchi.

They consist of redness of the mucous membrane which is often thickened sometimes eroded or ulcerated and very generally covered with more or less albuminous exudation.
Of false membrane. This false membrane is formed first oftenest in the Larynx then in the Trachea, and in both more frequently than in the Bronchii. The false membrane is greyish white or passing into a whitish yellow. Its thickness varies greatly. Michael and Rand consider a piece and a half to two lines to be its utmost thickness. It is thickest in the posterior and superior part of the Trachea, and thinnest about the Larynx and epiglottis when it extends there and in the lower and anterior part of the Trachea. Its consistence and tenacity also vary extremely, not only in different but in the same case. It is almost universally secreted when it approaches the Bronchii, where it generally passes into a thick glutinous mucus. It has been supposed that these membraneous concretions may arise from a certain state of the system, most probably connected with excess of the albuminious constituent in the blood together with a disposition of the inflamed parts to secrete it.
Musical
The state of the exudation varies with the stage of the disease, the severity of the inflammation, and the treatment which has been adopted. Thus when a child dies very early in the malady, instead of the albuminous exudating, a tenacious, or reddish frothy mucus is only formed. It seems that this glutinous exudation becomes more condensed and moulded into a false membrane, or partially gums the tubes as the disease advances.

All the task made with some care upon the false membrane of counts agree in proving this exudation as specifically, and usually exclusively composed of albumen.

"It is says Mr. Schulze, insoluble in cold and boiling water, but is soluble in the concaninic alkali, with the end of heat; when burnt there remains Carbonate of soda and 2 parts salt of lime."

It is nearly always first formed in the Larynx and trachea downwards, along the Trachea. A different opinion however has been formed by Mr. Bretonneau who
maintaining that almost always the disease commences in the Pharynx and Mr. Trusseau is also of the same opinion and says, "Croup commencing in the Larynx is a rare and exceptional fact." The maintenance of a different opinion Trusseau explains on the ground, firstly, of the insufficient attention that has been paid to the examination of the mouth and Pharynx; and secondly, because in most instances the early symptoms of the malady are comparatively trivial and before the Larynx and Trachea have become involved the slightest traces of the Pharyngeal affection have passed away. The formation of this serenititious membrane and even its renewed appears at times to be very rapid. Dr. Watson mentions a case in which Tracheotomy had been performed upon a child suffering from Croup; at one velvet in the morning a tubular portion of membrane of the shape and size of the Trachea was expelled through the artificial opening. Immediately after the operation the child experienced great-
relief, its respiration became easy, and it fell asleep. At eight o'clock the same morning the child expired. Upon post-mortem ex-

amination the Trachea was found to contain a new lattice of lymph or of concrete albumen, as this gives to show that such a membrane may be formed in the course of six or seven hours. The false membrane is in some respects identical with the layers of coagulated lymph formed out in suppuration of the pleura or pericardium, but there are certain essential differences which may serve to distinguish them from each other, that whereas in trunks the membrane is more brittle, less fibrous and more albuminous than the false membrane that covers the inflamed pleura or pericardium, the one formed in pleurisy or tracheitis, that in trunks is not as it never becomes organized with the mucous surface of the Larynx over which it is diffused, and is never connected to it by blood vessels, so that sooner or later it becomes detached and the Trachea again resumes its normal appearance.
Guerin contended that the formation of minute blood-vessels was found to exist, but this is most probably due to the small bloody spots, the result of violent inflammatory action.

The cavity of the mouth and face are not present any remarkable alteration in cases of eructa... But we often find congestion about the face and soft palate sometimes confined with a few beady deposits of serous membrane in those situations, or the mouth, are found in a state of suffocating relaxation.

When the child has been under suffocation, the face is found livid, the eyes, project, and the veins of the neck distended, and when the disease has been of some duration, the extremities are slightly oedematous, sometimes there is a serous effusion at the base of the brain, or into the cavity of the ventricle, and very often a pretty considerable engorgement of the vessels that enter the cerebral substance. The abdominal vessels do not present any particular alteration.
In some instances, death seems to be caused by syncope due to a deposit of fibrin in the brain, as Dr. Richardson has found the cavity of the right auricle filled with a fibrinous concretion, which must have been formed during life in consequence of the meshes of fibrin being crossed by the current of blood flowing over them from the superior and inferior vena cava.

Treatment.

In no disease is the prompt employment of appropriate treatment more important than in crump, since in many cases the use of remedies sooner becomes unavailing, and it will in general be found that cases of recovery in crump have been frequent in proportion to the early adoption of remedial measures, because it is one thing to check inflammation and prevent its effects from taking place, and another to remove those effects when they have taken been fairly formed, and because it is in the juxta of these objects that the treatment of crump has been directed.
Even in cases where the attack is merely apprehended, but where cough exists, attended with a slight running cough, the patient should be watched most particularly and protected against all circumstances likely to excite or aggravate inflammation, and attention should be particularly directed to the character of the respiration during sleep as well as in the waking state. The child should be confined to the house, placed in a warm bath and removed to bed and put before fumigating shed, and the functions of the bowels and skin attended to. A medicating emetic is an invaluable remedy in the acute. The following being perhaps the best.

B Pulvis Spicis carb. si
Autrorumii protapis tinct. gri
Misce fist pulvis solutione permiscens.

This may be varied as circumstances will permit. The act of vomiting will restore to a certain extent the equilibrium of the circulation, and by its means one gets rid of all irritating matter, and then removes the source which follows the action of these emetics, nervous
New Method of Treating Gripe by Dr. Lehmann
Staff Surgeon at Trujed...
action is subdued, the heat, action quieted, the capillaries relaxed and the function of the skin and mucous membranes established. By such precautions, we may hope to succeed in warding off the attack.

The following is the plan recommended by Dr. Le Lannou: "According to my experience, says he, there is no better way of treating croup at its commencement than by the application of hot water to the larynx.

This method has the advantage of being simple, efficacious and easily applied, and its good effects are not injurious to the constitution. The proper time for the application of this method is at the very commencement of the disorder, when as it is usually the case, the child is awakened suddenly during the night by its invasion. No time should be lost when we observe that the breathing is anxious, disturbed and attended with the well known croupy sound. Even when the attack assumes its most dangerous aspect, that is coming on very suddenly during the night, the
on the eye may be arrested by the application
of hot water in the following manner,
a sponge about the size of a large fist
rolled in water as hot as the hands can
beon must be gently squeezed half dry and
and instantly applied beneath the little
bumps or chills over the lower part of the windpipe
When the sponge has been held for a few minutes
in contact with the skin, its temperature
begins to sink, and it requires to be stripped
of air in the hot water. It is better to have
a second sponge ready so that they may
be applied alternately. A perseverance in
this plan during from ten to twenty
minutes produces a decided relief of the
chills over the whole front of the throat and
as of a strong Chin春风 had been applied
This relief must not be followed or attended
ed in followed by pericardium. In the meantime
the whole system feels the influence of the
local treatment. A warm perspiration
breaks out which must be encouraged by
warm drinks as honey, weak tea &c. A
notable diminution takes place in the

frequency and tone of the cough, while the
hoarseness, almost disappears, and the cough
marring tone of voice subsides along with the
clysteria and rest-lishp; in short all danger
is over and the little patient again feels
asleep and awakens in the morning with-
out any appearance of having recently suffered
from an dangerous an attack. Then the
suitable application of hot water in the
manner above recommended does not-

paravence well marked and evident-relief
at the end of twenty-five minutes, then
nothing more more can be expected from
a longer perseverance in it; and the uneasy
cough, hoarseness, anxiety; and clysteria
of the chide must be met-by other measures.
I must observe however continues Dr. Schmaun
that this method has not yet failed
in any hands when applied at the commen-
ment of the disease, and it has been practiced
in small families I attend so many
cases foot-hand successfull, and by pre-
ministerance could be prevented:
When the disease has fairly set in, the three remedies that we mostly rely upon, are Bloodletting, Tartarized Antimony, and Mercury.

If the disease set in with violence, and is of an acute nature, and if the disease be plethoric and the face flushed with an excited pulse, we unhesitatingly have recourse to Bloodletting either general or Local. Dr. W. says, Bleeding from the jugular vein is preferable in cases of severe indisposition to venesection in the arm, since the latter often fails in children under three years old; and the blood never flows so freely as when taken from the jugular vein.

As to the amount of blood to be abstracted, no definite rule can be laid down; but we must first consider the patient's strength and previous health, the intensity of the symptoms and also the effect produced by the flow of blood. One ounce to an ounce and a half for each year of the child's age is considered amply sufficient to produce an effect upon the general system.
Dr. Copleand recommends local blood letting in some practice as being preferable to
in general, on account no doubt of the disease
in towns tending to put on an aethenic
character. When we wish to practice
local BloodLetting we may either do it by
the application of Leeches, not to the neck,
but over the first bone of the shewer, as
difficultly may be experienced in arresting
the hemorrhage in the former situations,
without their being very intolerant of pressure
in the neighborhood of the groin above,
or we may use emptying gashes between
the shoulders.

Purtoe emetic may be given in nauseating
or emetic doses. Dr. West prefers the latter
mode of administration, and he endeavours
in corroboratin of the result of his own
experience the fact that in thirty one
out of fifty four cases of true Croup treated
by Mr. Waller's ipecacuanha and antimony
were administered in full doses as emetics,
that fifteen recovered out of the thirty one,
whereas of the remaining twenty two, in which
There was sparingly resorted to only one remedy. To produce an emetic effect antimony should be given in doses of $\frac{1}{8}$ to $\frac{1}{4}$ of a grain according to the age of the patient, every ten minutes, until vomiting is induced. It should be given in the form of a watery solution.

Mercury. After the severity of the disease has been subdued by blood-letting and antimony we next have recourse to mercury as it tends to subdue inflammation and to arrest the formation of false membrane, and to produce a state of favorableness for its detachment. The best method of administration is to give one grain of calomel in combination with one or half a grain of the cantharides as a nauseating expectorant or $\frac{1}{2}$ to $\frac{1}{2}$ of a grain of antimony frequently repeated.

The constitutional effects of the remedy, (rarely however in children), may be induced by inspiration, by rubbing into the thighs or oscilating a draught of very mercurial ointment every two hours. Mercury should.
Observations on the Pathology of Croup with remarks on its Treatment by Topical Medications. New York 1844
not be given in place of Tartar Emetic but as an adjunct. As the action of mercurials is far too slow to warrant a crisis which leads so rapidly to a fatal termination.

If the child be in the advanced stage and in a state of collapse, the mercurial emetics should be discontinued, but emetics are still useful and they must be of a stimulating character such as alum, sulphate of lime, or sulphate of copper as these do not suppress the depressing effects of mercurials. A Peruvian Emetic. The sulphate of copper being perhaps the best given in 1/4 to 1 grain doses every five or ten minutes until vomiting is in excess. A strong, trapical, and ammonia are useful as stimulants and expectorants.

Blistering have been recommended by some writers, but if employed, they should never be placed on the throat and never used until acute symptoms have subsided.

Tropical Remedies. Horace Green of New York advocate the use of the nitrate of silver in solution, to be applied by means of a few drops and introduced into the lungs.
Memorize the dipthongs in the New Syllabary Society's publications for 1859.
in the proportion of two pints to the
ounce of distilled water, and used every
two hours. This topical application will
be of more service in asthmatic cases, occurring
in children of debilitated constitutions,
A considerable amount of irritation is at
first produced, but this is followed by a
speedy and decided relief. - Gressent
The approval of this practice on the ground
that it provokes a main trend itself, but
this is a mere superficial effect. The
capillaries are affected by it and thus
inflammation is arrested.

The insufflation of pulverized alum to
the chest, and, by means of a tube, has
been so recommended by M. le Pasteur
and Davolet.

The use of the warm blest ought never to
be omitted; the temperature must being lower
than 96° to 98° Fahrenheit; and the cloth should
remain on it for two minutes at least, and
afterwards must immediately be laid on this
place to equalize the circulation and relieve the
mucous membranes by determining to the stem.
and secondarily to produce depression and relaxation.

I now come to consider lastly, the operation of Tracheotomy, and are we justified in leaving recourse to this operation in the last stages of disease when all other remedial measures have failed? Much has been said and written about this operation, some recommending the practice, others denouncing it as cruel and treacherous, and at worst never to be performed, on the ground that its success of even, all other means of relief, has been followed by success.

I should like toUserProfile the limits of this Paper were to discuss, finally, the merits or demerits of this operation, but the subject is too important to be touched on without some brief allusion being made to it.

Tracheotomy has been practised from the most remote antiquity in serious cases of acute suffocation. Since Francis Home was the first to suggest it in cases of theoretical grounds, some has been object being the
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removal of the false membrane, and
not to facilitate the entrance of air into the
Trachea, he says, "We have then no method
remaining to save the patient's life but
that of extracting the false membrane, this
cannot be done through the fistula. When
the case is desperate many worthless try
Tracheotomy? I can say he see no weighty
objection to that operation, as the membrane
can so easily be put aside in so very short.
Many years were spent before the
value of this operation was put to the
trial and even for a long time after it had
been accomplished, but one instance in which
life was saved by its performance was
that upon record namely. The one achieved
by Mr. James of London and related
by Dr. Grieve. -

In the year 1824 after nine unsuccessful cases
Mr. Bretton once lead the courage to perform
it for the seventh time, and this seventh
operation was crowned with success and it is principally to Mr. Bretton once that we
are in debt for bringing this operation
more into practice.

What are the principal objections to the operation?

1. The danger peculiar to the operation.

2. The greater difficulties of performing it upon children than adults, and the risk of haemorrhage.

3. The existence of inflammatory exudation into the Trachea and Bronchi below the situation of the artificial opening, so that the exit of air would be prevented from being admitted into the lungs even if there was an aperture in the windpipe. -

4. The immediate entrance of air into the lungs before it has been warmed in the mouth and thus more has been dependably done as a circumstance which adds to the success of the operation.

5. The risk of the operation being followed by Bronchitis and Pneumonia.

As to the result of the operation,
At the Hospital our Surgeons recorded from the year 1850 to 1854 the proportion of successful cases was nearly a quarter as will be seen by the following table,
In 1850 20 operations. Cases about $\frac{2}{3}$
- 1851 31 ch 12 ch more than $\frac{9}{3}$
- 1852 5-4 ch 11 ch less than $\frac{4}{3}$
- 1853. 51 ch 7 ch only $\frac{4}{7}$
- 1854. 44 ch 11 ch $-\frac{4}{7}$

$\frac{215}{47}$ operations. 47 cases about $\frac{4}{7}$

The result of the operation's operations in 1854 were as follows. 10 operated on nine children; of these two died while seven recovered.

One in four years he performed the operation twenty-four times, and fourteen recovered, equivalent to more than one death.

In the period over twenty operations were conducted. Borech on 150 cases.

M. Deleere of Paris reckons one favorable case in two operations, and in the Velsian two in ten.

How are we to reconcile ourselves to the great diversity of opinions that prevail, between French and English associations, with reference to the value of the electromy in trunks, as a lever
are we to account for the comparatively great success that follows the operation in France? This can only be explained by the fact, that the disease as we meet with it in this country differs in many respects from French cases; in the latter the Trachea is relieved, or even reversed by it, and it is limited to the Lungs and Larynx. The false membrane hardly ever commences in the Trachea here, and the Bronchitis and Pneumonia which are so apt to complicate the disease are almost unknown in France.

In estimating also the results of Tracheotomy in France, we must take into consideration that they operate early, whereas the disease would have been accessible to other treatment; and this in some cases a greater chance of success, whereas here the operation is only had recourse to quite as a dernier resort. The two main obstacles to success after Tracheotomy in France are undoubtedly
The existence of inflammatory congestion in the Trachea and Bronchii below the situation of the artificial opening, together with a congested state of the lungs in the first instance; and secondly the delay in operating; and thirdly a point worthy of consideration whether the first objection may not, to a certain extent, be removed by obviating the second; in fact by proceeding to an operation at an earlier period before the suffering stage of crepita has fairly set in.

It is only reasonable and consonant with our pathological knowledge, to suppose that - the unfavorable state of the lungs so often found after death results from the obstruction higher up, and these organs are removed more rapidly for death in proportion as the disease advances for it is found after death in some cases, only one of the superior lobes is congested or inflamed, whilst in others, when the disease has been more severe and has lasted longer.