

usually the result of a chronic interstitial pneumonia. In these cases the bronchial tubes are altered into a series of saculi opening one into another and between which is dense cirrhotic lung tissue. These sacs are lined by smooth membrane and they often lie like large cysts near the lung surface, just beneath the pleura. *Partial* bronchiectasis occurs here and there in one ramification, *i. e.*, one branch or tube of the bronchial tree. Here the dilatation is usually cylindrical, although now and then sacs are found. This condition is most frequently met with in such weakening diseases as phthisis, chronic bronchitis, emphysema, and chronic pleurisy. The retained secretion in all varieties becomes offensive.

Symptoms.—The symptoms are in a great measure those of the underlying conditions, *i. e.*—phthisis, chronic bronchitis, emphysema, etc., and hence, in the partial dilatation of these most common causative associate diseases, the diagnosis is exceedingly difficult. Bronchiectasis may be suspected when the patient goes several hours without any cough, and then upon a change of position or any unusual effort suddenly coughs violently and expectorates quite a large amount of secretion, dark in color, purulent in character, acid in reaction and foetid in odor. Microscopically this accumulated secretion consists of pus cells, mucus and fatty acid crystals.

Physical Signs.—These are not constant nor positive. They vary according to the size and form of the cavities and whether empty or full of accumulation. If the sac cavities are large they may be discovered and often simulate phthisical cavities, except that they are usually found at the base and are unilateral. The diagnosis is not so difficult if the physician has the opportunity to

watch the patient over a considerable period of time and sees him frequently. The *character* of the *expectoration* and its expulsion *at such long intervals* is characteristic. There is a similarity between bronchiectasis and phthisis, but in the latter the apices are affected, and both are usually involved; the sputum also contains the tubercle bacilli. Also in phthisis there is a rise of temperature at night, and a sign of most importance is that in phthisis there occurs first dullness *followed* by the cavity while in bronchiectasis we find a cavity followed by the dullness as the latter fills with secretion.

Prognosis.—Victims of bronchiectasis may live a long life, though the bronchiectasis adds to the seriousness of the associated disease. It is, however, a most discouraging condition to treat, as it is chronic of the chronics.

General Treatment.—This should be directed primarily to the initial condition, as it is most foolish to attempt relief of the bronchiectasis per se, without giving attention to its associated disease. As locally antiseptic and healing, the following is excellent: R. Guaiacol 2 parts, Menthol 10 parts, Ol. Olivii 88 parts. S.—Inject one drachm into the trachea twice daily. Osler highly recommend Creosote inhalations. Stuff the nostrils with cotton and protect the eyes with goggles; put one drachm of Creosote upon water in a saucer and evaporate it over a spirit lamp, inhaling the fumes. Use this for fifteen minutes every other day and increase to using one hour each day. Continue this for three months. Also, Guaiacol, Carbolic Acid or Menthol sprays. The general nutrition in these cases is most important and must not be neglected. Cod Liver Oil, Malt Extracts, and stimulation are valuable. Deep breathing; "coughing down hill,"

i. e., lying on the sofa or bed with the head hanging over the side, lower than the body,—will aid in expelling the accumulated secretion. Bathing the chest with cold salt-water followed by friction, will give tone to the parts. All these points should be attended.

Remedies.—Are mainly those for the underlying condition.

Hepar sulphur.—Strumous diathesis. Glandular and catarrhal tendencies, lack of resistance, sensitive to cold and dampness, cough, hoarseness, large accumulation with tendency to become purulent in character.

Calcareo carbonica.—In giving particular attention to general constitutional condition. Sweats, weakness, glandular enlargements, sensitiveness to climatic changes, chest sensitive and sore. Painless, catarrhal hoarseness with shortness of breath. Cough especially in evening and at night, with profuse expectoration of sweetish mucus.

Sulphur.—General chronicity; acts so well upon the glandular system and mucous membranes. Hoarseness, weakness, cough with chest pains, emaciated, stooping people, of strumous, psoric type. Valuable as an inter-current.

Silicia.—Perverted nutrition—scrofulous or rachitic individuals. Chilliness, profuse perspiration, expectoration is thick, yellow, purulent and lumpy.

Stannum iodide.—Is a remedy that most often covers the general totality of this diseased condition. *Iodine* with its peculiar adaptability to scrofulous people and the aged. Emaciation, exhaustion, chronicity, hepatization of lung tissue with hoarseness, tightness and oppression. Then, *Stannum* with its debilitating sweats and great sense of

weakness across the chest, its cough with profuse expectoration of greenish muco-pus of putrid, sweetish and offensive taste. Its nightly aggravation and general phthisical picture. The combination of the two as found in *Stannum iodide* gives a remedy par excellence in bronchiectasis.

Kali bichromicum.—With its offensive, thick, tough expectoration, so difficult to raise, should not be overlooked. Also, the other *Calcareas* (*Iodide* and *Sulphate*) and *Carbo. veg.* are all to be thought of when indicated.

ASTHMA.

Definition.—Asthma is a term often misapplied. It should not be used interchangeably with *dyspnoea* (*i. e.*, renal or cardiac “asthma” is incorrect), but should be applied only to that form of difficult breathing due to spasm of the circular fibres surrounding the bronchial tubes, and to some extent involving the respiratory muscles, and known as bronchial or nervous asthma. Attacks are excited by any local irritation of the bronchial mucous membrane, and in a reflex form, by conditions in other more remote organs.

Etiology.—There are many and various theories as to its causation and all doubtless true, for it is a hydra-headed ailment. It is the consensus of opinion, however, that there is a peculiarly hypersensitive condition of the nervous system, particularly affecting those nerves distributed to the respiratory tract. It is prevalent in certain families; males are more often victims than females. A striking variation of causes induce the paroxysms,

change of atmosphere or climate, odors of particular flowers or fruits, emanations from animals, etc., dust, pollen, emotion, uterine or ovarian troubles, abnormal nasal or pharyngeal conditions, certain articles of diet, or indigestion. Chronic cases recur year after year from the least cold or special exciting causes.

Symptoms.—Sometimes there are premonitory signs, as oppression, mental depression, polyuria, chilliness, flatulency, etc. Nocturnal attacks are the most common. The typical attack begins with oppressed and difficult respiration, gradually or rapidly increasing until the accessory muscles of respiration are called into play. Inspiration is short and loud, expiration prolonged and wheezy. The chest becomes distended and barrel-shaped. If the attack is severe, evidence of deficient aeration appear, the face anxious, bedewed with sweat, the pulse grows weak and rapid, hands and feet cold, neck distended and turgescient; the redness extends to the face which becomes flushed, then blue from cyanosis; the cough is tight, dry and wheezing with scanty tenacious expectoration. Just as appearances begin to look desperate the spasm relaxes (from carbonic acid poisoning), the cough loosens, expectoration becomes freer and the patient sinks back exhausted. The paroxysm may last from a few minutes to several hours. The interval may be from one hour to several weeks.

Physical Signs.—Inspection shows the barrel-shaped chest, the diaphragm is depressed and moves but little. Percussion gives increased resonance due to over-distension. Auscultation reveals all kinds of sibilant and sonorous rales throughout the chest. The sputum consists of small, extra tenacious masses of mucus (called

“pearls”) floating in thinner mucus. The tenacity is due to super-abundance of mucin. These little pellets if straightened out and examined will be found to be in spiral form. There are many theories as to their formation—but Curschman, who first discovered and described them, considered their shape due to the mucin forming casts of the finer bronchioles which are then expelled by violent coughing and a rotary motion of the ciliated epithelia.

Course.—Severe attacks may repeat at short intervals for several days; in the interval there will be cough and roughened respiration. In the purely nervous type of asthma there may be little cough or other symptoms in the interval. Chronic cases result in chronic bronchitis and emphysema, and these are the lesions left to contend with. Death in a paroxysm is unknown or at least unrecorded.

General Treatment.—For the immediate relief of a paroxysm use inhalations of chloroform. Sulphate of Morphine, $\frac{1}{8}$ to $\frac{1}{4}$ grain, or Pilocarpine, $\frac{1}{8}$ grain, hypodermatically. Nitrite of Amyl., 2–5 drops inhaled from a handkerchief often gives prompt relaxation of the spasm. A cup of strong coffee, a dose of whiskey, the fumes of tobacco, or the application of a mustard plaster, act well in some cases. Inhaling the smoke from burning nitrate of potash with stramonium leaves is an old and efficacious means of relief. Convenient forms of the latter combination in powder, pastiles or cigarettes are to be obtained.

Every case should be carefully examined to ascertain the underlying cause. The influence of climate and occupation; the personal habits of the patients, especially

as to proper rest, sexual excesses or the prejudicial use of alcoholics; the state of the digestion with special reference to the hepatic and bowel functions or excess of uric acid; possible nervous influences, notably uterine or ovarian disorders; examine the naso-pharyngeal region for hypertrophied turbinatids or other abnormalities as these are a very frequent causative factor. Cold bathing of the whole body or spinal area is often very beneficial in neurotic cases, also the application of electricity.

Remedies.—Those indicated for the totality of symptoms should be sought. To be especially thought of for the asthma are:

Arsenicum album.—Night attacks of suffocation, cannot lie down, burning chest pains, dry cough, great anxiety, thirst, restlessness, irritability and prostration.

Belladonna.—Nervous excitement, flushed face, throbbing headache, nocturnal aggravation, tight, hard cough, sanguine temperament.

Bryonia.—Hard, dry cough with bronchial soreness and shooting chest pains. Sense of oppression, must sit up to get breath; attack brought on by exposure to wind or from violent exertion.

Cimicifuga racemosa.—Especially helpful in the asthma of rheumatic individuals with muscular aching and nervous irritability. Acts best in mother tincture.

Cuprum arsenite.—Strong evidence of spasmodic character. Violent paroxysm with nausea, vomiting or diarrhoea. Nightly aggravation, great sense of suffocation, patient turns bluish, with thirst, restlessness and cramps in the calves and toes

Grindelia robusta.—Awakes from sleep in attack. Loud wheezing respiration with expectoration of tough mucus, chest filled with coarse rales.

Ipecac.—Asthma with many catarrhal manifestations. Loose, rattling cough, spasmodic in character, with extensive rales throughout the chest. Great difficulty in breathing with sweat, cyanosis, nausea and vomiting; gastric cases with inactive liver and furred tongue.

Kali iodide.—Given empirically in very obstinate cases will very frequently effect a cure where other means have failed. Dose, 5 drops of the saturated solution gradually increased to 20 drops, in water, after each meal.

Lobelia inflata.—Especially suitable to cases of gastric origin. Tight, ringing cough with great dyspnoea. Attack is accompanied by marked sensation of faintness and weakness at the epigastrium with extreme nausea and vomiting.

Nux vomica.—Tearing cough and pharyngeal scraping. Gastric cases or from alcoholic excess. Neurotic, irritable subjects, with distention of the stomach, acidity and constipation.

Quebracho.—Great dyspnoea with cyanosis, compelling the patient to sit up in bed. Acts remarkably in some cases in controlling the paroxysm. Thirty drops of the mother tincture in four ounces of water, teaspoonful doses every fifteen minutes.

Quinine sulphate.—Cases marked by periodicity in malarial regions or suspects.

WHOOPING COUGH.

Definition.—Known also as pertussis and tussis convulsiva. An acute, contagious malady, characterized by a series of convulsive coughs, followed by a long drawn,

spasmodic and audible inspiration. This latter constitutes the "whoop" and gives the disease its name.

Etiology.—Whooping cough is contagious and is most frequently taken by direct contact with one so affected, but may be contracted from rooms, houses, etc., in which those suffering from the disease have recently been. It is most prevalent in the winter and spring months and is essentially an epidemic disease, though sporadic cases are occasionally seen.

No age is exempt, though children between two and ten are by far the most susceptible. In early infancy and old age it is often a most serious affection. Some persons seem immune and one attack, as a rule, protects against another. Epidemics of pertussis frequently follow or precede epidemics of measles or scarlet fever. Several investigators have described a bacillus which is invariably present and is no doubt the specific cause, but is not as yet fully understood.

Pathology.—Whooping cough has in itself no essential pathological changes or lesions.

Symptoms.—There is a preliminary or *catarrhal stage*, lasting from seven to ten days, during which the patient presents the usual symptoms of an acute cold, slight fever, lassitude, coryza, injected conjunctiva and bronchial cough. After eight or ten days the catarrhal symptoms improve, but the cough increases in severity and takes on a paroxysmal character with nightly aggravation. This sequence of symptoms in the presence of epidemic whooping cough makes a tentative diagnosis possible, though many cases are unsuspected until the "whoop" establishes the true diagnosis. During the *paroxysmal stage* the symptoms are characteristic. The

child seems to have a warning sensation of fear or dread, with some oppression or dyspnoea, and runs at once to the parent or nurse for aid and support. The paroxysm consists of a series of rapid expiratory coughs, increasing in intensity and terminating with a long drawn, crowing inspiration, which constitutes the "whoop." The paroxysm results in the expectoration of a variable quantity of tenacious, glairy mucus, which is expelled by a combined gagging and coughing effort. If the paroxysms are severe and frequent vomiting is quite usual. During the attack, which lasts from one-half to five minutes, very little air enters the lungs with resulting appearances of deficient aeration. The face becomes swollen and turgid, the veins are distended, the eyeballs red and protruded. Suffocation seems imminent when the crowing inspiration relieves the situation. In mild cases there may be only three or four paroxysms daily, while in severe cases they may occur every half hour. The attacks are excited by crying, eating, laughing or exertion. The acute spasmodic stage lasts from two to four weeks and then very gradually subsides by diminution in severity and frequency of the paroxysms. The recovery, however, is protracted.

Complications.—The violence of the paroxysms of cough frequently induces epistaxis or conjunctival hæmorrhage and occasionally hæmoptysis. A small superficial ulcer will be found under the tongue in about one-third of the cases. It is due to friction of the frænum against the teeth during coughing. If the attack is severe the frequent vomiting becomes a serious factor in inducing anæmia and exhaustion. Bronchitis is usually present. The most frequent and serious complication is broncho-pneumonia with atelectasis.

Among the less frequent complications are pleurisy, pneumo-thorax, heart strain, and convulsions from cerebral engorgement.

Diagnosis.—During the catarrhal stage the diagnosis is important but difficult. A series of rapid convulsive coughs with tendency to gagging, the age of the child and a nightly aggravation are suggestive. In the paroxysmal stage the "whoop" and other evidences make the diagnosis an easy matter.

Prognosis.—In uncomplicated cases the prognosis is good, but an associated broncho-pneumonia makes the outlook very grave. The prognosis is influenced by the strength of the patient and the violence of the disease. In England whooping cough ranks third in diseases as a cause of fatality among children.

General Treatment.—A child with pertussis should not be permitted to associate with any but the immune, and delicate children should, if possible, be removed from a school or neighborhood when the disease is prevalent. The idea so often advanced by ignorant parents that it is best to expose a child at once to all those infectious diseases, as "it must have them sooner or later any way," is most pernicious and must be combated. Whooping cough must be regarded as contagious so long as the "whoop" is present and the cough is paroxysmal. Parents should be warned of the serious nature of the disease. The patient should wear suitable underclothing and avoid undue exposure. Fresh air and a good nutritious diet are important. Moderate outdoor exercise may be enjoyed; avoiding violent exertion. Rectal enemata of nourishment and rest in bed may be necessary if the attack is severe and vomiting is frequent. Change

of climate is beneficial in severe and protracted cases. The patient should be carefully watched during convalescence for complications. So many palliatives are recommended that it is doubtful if one possesses virtue over another. In cases of moderate intensity they are not necessary. In severe cases the inhalation for ten minutes several times daily of the steam from a one per cent. solution of Carbolic acid, Terebene, Creosote, Guaiacol or Eucalyptol, in a suitable atomizer or open dish, may modify the paroxysms. The dry vapor of either of the four last of these diluted one-half with alcohol may be used carefully from an inhaler or handkerchief with benefit. The author has found inhalations of the steam arising from a small teaspoonful of Hypochlorite of Lime (common bleaching powder) in a pint of hot water or the following, R. Tr. Benzoin ζ i, Menthol grs. x, boiling water ζ xvi, soothing and beneficial. One of the most efficacious means of modifying and shortening the disease is to dress the patient each morning in fumigated clothing, and after removal thoroughly fumigate the sleeping room for five or six hours daily with sulphur fumes, the patient returning each night to sleep in the room after it has been well aired. Excellent results have been obtained from this method.

Remedies.—*Belladonna.*—In the beginning or in severe attacks, frequent violent paroxysms of hard dry cough, worse at night, with flushed face, eyes swollen and conjunctiva injected. Child cries after cough which induces headache, involuntary micturition, or even nose bleed. Nervous twitching or convulsion.

Castanea vesca.—A dry, ringing, violent, convulsive cough, especially if associated with intestinal catarrh and a longing for warm drinks.

Corallium rubrum.—Spasms of dry, suffocative cough, so rapid and violent that the child loses its breath and turns blue in the face, followed by great exhaustion and hawking of mucus or even blood.

Cuprum metallicum.—Violent and long-continued paroxysms of cough, completely exhausting the patient. Child becomes rigid and the face turns purple. Paroxysm is followed by vomiting and is relieved by a swallow of water.

Drosera.—A favorite remedy because so often indicated. Paroxysms of spasmodic, dry cough, following each other in rapid succession, threatening suffocation and resulting in retching or vomiting, with mucus expectoration or bleeding from the nose and mouth. Deep, hoarse voice and hoarseness worse at night. Harrowing, titillating cough.

Ipecac.—Suffocative, incessant and violent cough, the child becoming stiff and blue in the face. There is constriction of the chest and much rattling of mucus. The cough causes nausea and vomiting, with epistaxis or hæmoptysis. An excellent remedy, especially with much bronchial secretion, nausea and gagging.

Magnesia phosphorica.—Asthmatic oppression. Dry, tickling, spasmodic cough, with chilliness, flatulent colic and bloated abdomen. Symptoms relieved by warmth. Especially suited to weak, exhausted subjects.

Mephitis.—Suffocative feeling, spasmodic cough, so violent patient must be raised up, cannot exhale, gets blue in the face. Attacks especially at night; mucus rales in the chest. Acts best in 1x to 3x.

Naphthalin.—Long-continued paroxysms of convulsive cough, cannot get breath; with bladder irritation. Has been much used in this affliction with good results, in lower potencies.

III.

Diseases of the Lungs.

NOTE.—Pneumonic Fever and Tuberculosis are properly classified as general infectious diseases, but are here given because their most usual and serious manifestations occur in the lungs. The chapter on Tuberculosis in general is introduced to cover the subject more comprehensively before describing its pulmonary lesions.