

PULMONARY HYPERÆMIA.

Definition.—Pulmonary hyperæmia consists in an engorgement and over-distension of the pulmonary vessels with blood. It is found in two forms, the active and passive, which will be described separately.

Active Hyperæmia.—This form is a sudden engorgement of the lungs with blood, not an independent disease, but rather a condition, similar to the first stage of various inflammatory diseases of these organs, but terminating before the actual inflammation is established.

Etiology.—Among the causes may be mentioned cold, chilling the body surface suddenly, inhalation of irritating gases or substances, embolic obstruction to the flow of blood through the capillaries, the result of violent heart action from over-exertion or excitement. Alcoholism is a predisposing cause.

Pathology.—The vessels of the lungs and mucous membrane lining the bronchi are distended with blood, with resulting high color. Some œdema is present with a flow of blood-stained frothy serum into the vesicles.

Symptoms.—There may or may not be a chill, followed by some fever. There is always, however, a severe degree of dyspnœa and oppression, stitching pains, cough with frothy, rust stained expectoration, even bloody or amounting to actual hæmoptysis. Physical examination shows feebleness of respiratory sounds, approaching to bronchial breathing, the resonance is impaired, with subcrepitant rales.

Diagnosis.—Is based on the sudden onset with determining cause, great dyspnœa and an absence of the

signs of other acute pulmonary disease. Resembles pulmonary œdema, but the associated cardiac or renal disease differentiates the latter, though often separation is difficult as each is usually accompanied in some degree by the other.

Prognosis.—Is usually favorable, unless leading to pneumonia. Some fatal cases are reported after violent exertion or exposure to cold.

General Treatment.—Rest in bed, heat to the feet, mustard or flaxseed poultices applied to the chest with the use of hot foot baths.

Remedies.—*Aconite.*—Sudden violent attack from exposure or chilling the body surface. High fever, thirst, restlessness, great anxiety. Shortness of breath, oppression, with stitching pain and hot feeling in the lungs. Dry, hacking cough. A leading remedy.

Bryonia alba.—Fever, thirst, tightness and oppression across chest, with hard, dry, racking cough, and sticking pains, aggravated by motion and cough.

Ferrum phosphoricum.—Anæmic, debilitated persons. Hard, dry cough with sore chest and expectoration of blood-streaked mucus or pure blood. Best remedy for delicate subjects.

Phosphorus.—Hard, dry, racking cough from tickling in the throat pit. Tightness across the chest with a sense of great weight and oppression. Respiration rapid and labored with feeling of heat in the lungs. Voice hoarse and expectoration rusty or blood-streaked. The most popular remedy.

Veratrum viride.—Violent congestion in full-blooded persons. Thirst, nausea, high fever, with throbbing, bounding pulse and red face. Difficult breathing with sensation of a heavy load on the chest.

Passive Hyperæmia.—This variety of pulmonary congestion occurs in two forms, the hypostatic and the obstructive.

Hypostatic Congestion—Hypostatic Pneumonia.—This occurs at the base of the lungs and is due to the combined effects of a weak heart, blood changes, relaxed blood-vessel walls and gravity. Met with in protracted diseases where the patient is exhausted and lies much upon the back. Particularly prone to develop in the aged and enfeebled. Often occurs in profound nervous diseases, tumors of the brain, apoplexy, traumatic affections, opium or carbonic acid poisoning, and after surgical operations.

Pathology.—The changes are to be found in the bases of the lungs posteriorly, which are engorged with blood and serum, the alveoli filled with corpuscles and epithelial cells. This portion of the lungs becomes deep bluish red. The condition is due to gravitation of blood to the most dependent portions. At times it amounts to actual hepatization, the so-called hypostatic pneumonia. Edema is usually present to some extent.

Symptoms.—These are not well marked; they are discovered by careful physical examination based upon the favoring conditions. Cyanosis in varying degree may be present, with extreme prostration. There is evidence of consolidation, especially in the base of the lung on the side usually lain upon, with feeble breathing, bronchial in character, and fine, moist rales. Frequent examinations should be made in all conditions favoring pulmonary stasis.

Prognosis.—Is always unfavorable because of the gravity of the primary condition. Hypostatic conges-

tion is an evidence of profound exhaustion and cardiac weakness and must be promptly met, as it is an indication of the utmost gravity.

General Treatment.—Change the position of the patient very frequently. Give the most nourishing and easily assimilated diet. Rectal enemata of nourishment may be necessary. Employ stimulation to meet the cardiac weakness and relieve circulatory stasis. Bathing with alcohol accompanied by massage is beneficial. Strychnia nitrate in $\frac{1}{50}$ to $\frac{1}{100}$ grain doses will often tide over a crisis with its tonic effect on the heart.

Remedies.—The remedies are those indicated for the underlying diseased condition, but this complication may suggest such drugs as *Ammonium carb.*, *Antimonium tart.*, *Arsenicum alb.*, *Baptisia*, *Carbo veg.*, *Digitalis*, *Muriatic acid*, *Phosphorus* and *Rhus tox.*

Obstructive Congestion.—This form is due to the mechanical influence of various diseased conditions in the left heart or to the presence of new growths, in preventing the free flow of blood through the pulmonary vessels.

Pathology.—The lungs become distended with blood; they are consequently larger, heavier and firmer. The connective tissue hypertrophies and the coats of the blood vessels thicken. Hæmorrhages into the connective tissue takes place, producing pigmented spots, with forcing of blood cells into the air vesicles tinging the sputum. The lungs from lack of oxidation take on a dark brown color. This state is known as "Brown Induration."

Symptoms.—Are those of the existing heart disease, palpitation, oppression, cough, dyspnœa, all aggravated

by exertion. Hæmoptysis is not uncommon and the sputum is often tinged with blood; feeble pulse, inspiratory rales, oppression, etc., with existence of heart disease, establishes the diagnosis.

Diagnosis.—If in case of heart disease the patient complains of cough, dyspnœa, spits blood and crepitant rales are discovered; the diagnosis of this form of pulmonary complication is simple.

Prognosis.—A chronic condition of obstructive congestion of the lungs may maintain for years, its gravity depending upon the cardiac condition. Aggravation of the pulmonary symptoms (great dyspnœa, hæmorrhages, etc.), especially with cyanosis, is of grave import, indicating a rapid cardiac failure.

Treatment.—Is that of the co-existing heart lesion.

PULMONARY HÆMORRHAGE.

Definition.—Pulmonary hæmorrhage occurs in two forms: 1st. Broncho-pulmonary hæmorrhage, in which the blood is expelled into the bronchial tract and is duly expectorated. 2d. Pulmonary apoplexy or pulmonary infarction, in which the blood escapes into the air cells and areolar tissue of the lungs themselves.

Broncho-pulmonary Hæmorrhage or Hæmoptysis.—**Etiology.**—In this form the exudation of blood is due to a variety of conditions: 1st. It occurs sometimes in young people of either sex; the hæmorrhage will be quite free, but no cause discoverable. No evidence of pulmonary disease and no effect upon the general health. 2d. In connection with diseases of the

lungs, tuberculosis, pneumonia, cancer, gangrene, abscess and bronchiectasis or in ulcerative conditions of the larynx, trachea or bronchi. 3d. As a result of certain heart affections, notably, mitral lesions and in aneurisms, in which case the blood may ooze through the sac or the latter may rupture. 4th. In females in the form of vicarious menstruation. In malignant diseases with blood degeneration (typhus, typhoid, purpura hæmorrhagica, etc.). And at times in the gouty diathesis.

Symptoms.—Hæmoptysis usually comes on suddenly. The patient experiences nausea, and a warm, sweetish, salty taste in the mouth as it fills with blood; there is a cough and blood is expelled. It may be only a few drams and the trouble ceases or there may be the expectoration of small quantities for several days at a time. If, however, an aneurism has ruptured or a large blood vessel given way the flow of blood will be profuse, the patient will struggle to expectorate it, signs of asphyxiation will appear and life flicker out, literally drowned. Fatal hæmorrhage may occur into a large phthisical cavity without external manifestations of blood. The blood in hæmoptysis is light in color, frothy, mixed with mucus, of alkaline reaction, and the clot contains air cells.

During and for some time subsequent to an attack of hæmoptysis auscultation will reveal the affected chest-region filled with profuse rattling rales. The mucous expectoration may be blood-tinged for days after an attack of hæmoptysis. The patient usually has some indication of an approaching hæmorrhage, a sense of constriction and uneasiness during inspiration that he cannot account for. During the hæmorrhage the countenance looks pale and anxious, he becomes tremulous and often

faints; this is not due so much to the amount of blood lost as to the mental shock at the knowledge that a pulmonary hæmorrhage is taking place. The pulse is rapid and tense and the temperature subnormal, though it may temporarily rise to 103° just afterward. When the temperature rises to 102° or 104° after a hæmorrhage and remains so it indicates that the attack was the initial symptom of an acute tubercular pneumonia. There is greater prostration from a pulmonary hæmorrhage than from any other loss of blood in like quantity.

Diagnosis.—The physician has to diagnose hæmoptysis from hæmatemesis. The patient can usually tell whether the blood was coughed up or vomited. The blood from the stomach is dark in color, clotted, mixed with the ingesta, partaking of the latter's odor and with acid reaction. Its expulsion was accompanied with nausea and vomiting. It should be borne in mind that blood from the lungs may gush out rapidly, be swallowed and subsequently vomited, but in that case nausea and vomiting follow the hæmorrhage. Each case should be carefully investigated, if obscure, to ascertain that the blood does not come from the nose, naso-pharynx or gums, and that the patient is not malingering.

Prognosis.—It is well to remember that the *immediate* effects of an attack of pulmonary hæmorrhage are usually recovered from in spite of the seemingly alarming prostration, pallor and syncope that attend it. Excepting, of course, such cases as are due to the rupture of a large blood vessel or aneurism. The *ultimate* outlook, however, is unfavorable, as in the majority of cases pulmonary hæmorrhage is associated with some serious, though perhaps unsuspected, disease or is the precursor of pulmonary phthisis, acute or chronic.

Pulmonary Infarction.—**Etiology.**—Known also as Pulmonary Apoplexy, is that condition in which the bleeding takes place into the air cells and interstitial tissue of the lungs. The hæmorrhage, as a rule, is limited, and is caused by the blocking of a branch of the pulmonary artery by a thrombus or embolus. This condition is most frequently met with in chronic heart disease.

Pathology.—Infarctions usually occur at the surface of the lung and are in the form of a pyramid with the base toward the periphery; the pleura over this area is usually inflamed. An infarction appears like a blood clot, dark and firm in texture, but as time goes on it becomes red or brown. They vary in size from that of a walnut to an orange, according to the degree of the bleeding. The artery leading to the infarction will be found stopped by thrombus or embolus, and if the blood vessel be a large one the hæmorrhage may occupy a whole lobe. In some instances a stoppage of a large branch of the pulmonary artery will not result in the formation of an infarction, owing to the bronchial blood vessels and the extensive ramifying capillaries being able to carry on the circulation. The outcome of an infarction is variable. In some cases it is doubtless re-absorbed and the circulation resumed. In others, if the patient lives, the clot undergoes the usual changes and remains permanently as a shrunken, dense, fibrous mass. Sloughing, abscess, or gangrene may result.

Symptoms.—The manifestations of pulmonary infarction are obscure. It may be suspected when hæmoptysis occurs in association with chronic heart disease, particularly mitral regurgitation. If the hæmorrhage is extensive there may be symptoms of loss of blood with

shortness of breath and evidence of consolidation over the site of the infarct.

General Treatment.—The prime indications in the treatment of pulmonary hæmorrhage are to reduce the frequency of the heart beat and to lower blood pressure. As the most important aid in attaining this, perfect repose of body and peace of mind should be secured and rigidly insisted upon. The patient should lie down in a comfortable position, preferably on one side, to favor the easier expectoration of the accumulated blood. The diet should be light and unstimulating. Alcoholics are contra-indicated. Water increases blood pressure and should only be taken in small quantities. Ice may be sucked freely. The temperature of the room should be low, but the extremities kept warm with hot bottles. The patient should be encouraged to expectorate with as little effort as possible and the cough which is present held in check (voluntarily or by formulas given in the treatment of acute bronchitis). The patient is mentally depressed and despondent from the first, hence should be strongly reassured. In the management of these cases they may be divided into two classes: 1st. Those cases of moderate bleeding due to the transudation from highly engorged blood vessels or congested mucosa, with possible capillary rupture. 2d. Those violent and often fatal cases which are due to the rupture of a large blood vessel or aneurism. In the first classification, where the bleeding takes place in a moderate degree, the indicated drug (see Remedies) with the general measures suggested will prove all-sufficient and satisfactory. If, however, the bleeding is profuse and persistent the situation resolves itself into an alarming mechanical problem in which

the indicated remedy should be promptly supplemented by active styptic measures lest the patient's life-current ebbs away without his having received the benefit of all known means of relief. In these severe cases ice bags or ice water compresses should be applied over the bleeding area, which may be located by the rales. The application of ice should not be resorted to unless necessary and should be discontinued as soon as the hæmorrhage is controlled, owing to the danger of broncho-pneumonia following hæmorrhages when ice has been used. Free catharsis with saline laxatives (Magnesium sulphate ʒiv) lowers blood pressure and is indicated in plethoric individuals. Ligating the extremities sufficiently to prevent venous return also lowers the pressure in the pulmonary vessels. The cough in ordinary cases is a necessary aid, as it is desirable to get the accumulated blood out of the bronchial tubes, but if constant and harassing it will increase the bleeding and should be checked by Morphia sulphate, $\frac{1}{8}$ to $\frac{1}{4}$ grain, hypodermatically. This composes the patient, lowers blood pressure, stops the cough and thus materially aids in controlling the hæmorrhage. The fluid extract of Ergot, one drachm every two to four hours or one drachm in four ounces of water, and given one teaspoonful every one-half to one hour. This is an old and well-tested favorite when the amount of blood expectorated is considerable.

Ergotole may be used hypodermatically in doses of twenty or thirty drops every three or four hours.

Among the newer remedies that has already stood severe testing in the field of hæmorrhage—pulmonary and otherwise—and seems to promise a brilliant future, is Adrenalin chloride, Solution 1-1000. Five drops

every half to one hour until relieved and continued three times daily for ten days.

In persistent moderate hæmorrhage the powdered supra-renal gland in three grain tablets or capsules, given one three times daily after meals, is of benefit.

Remedies.—*Aconite*.—High arterial tension, bounding pulse, flushed face, anxiety, nervous excitement, hacking cough, with bright frothy expectoration.

Arnica montana.—Bleeding of dark clotted blood, with soreness and pain. After injury or overexertion.

Cinchona.—An excellent remedy to give after hæmorrhage to relieve the pallor, ringing in the ears, faintness, etc. These symptoms in some cases are more due to fright than to the amount lost.

Digitalis.—May be called for in the mother tincture after severe or repeated hæmorrhage, for the prostration, feeble pulse and cold extremities.

Ferrum phosphoricum.—Frequent slight hæmorrhages, frothy blood-tinged mucus, with cough, tightness and oppression. Particularly in anæmic persons or phthisical subjects.

Hamamelis Virginica.—The cardinal remedy for passive, painless bleeding, showing venous characteristics. In tincture or distilled extract.

Hydrastinine hydrochlorate is strongly endorsed by Dr. Wm. C. Goodno for pulmonary hæmorrhage. He advises its use in the second decimal trituration or in urgent cases in $\frac{1}{4}$ grain doses hypodermatically.

Ipecac.—Active, bright red bleeding, with severe cough and loose bubbling rales, especially with cold sweat and nausea.

Millefolium.—One of the best remedies. Easy flow of bright blood, with cough, oppression of the chest and palpitation. Given in the tincture.

PNEUMONOKONIOSIS.

Definition.—A fibrosis of the lung tissue, due to the inhalation of dust in various occupations. The condition has received several special names according to kind of dust inhaled: Anthracosis, from coal dust; Chalico-sis, from lime and stone dust; Siderosis, from mineral dust, iron, etc.; Byosinosis, from cotton and ordinary dust; Tabacosis, from tobacco dust.

Etiology.—Dust in various forms is always present to a certain degree in the air we breathe. In the ordinary quantity it is doubtful if it ever reaches the air vesicles, as it is caught by the naso-pharynx and the mucous membrane lining the bronchial tubes, thence it is swept into the larger bronchi and expectorated. When, however, dust is present persistently and in large quantities these forces are inadequate and the dust particles lodge in the finer bronchioles and air cells, penetrating the deeper structures and producing morbid changes. Workers in dusty occupations are short lived. The average age of grindstone makers is only twenty-four years. In coal mining districts the death rate from lung disease is very high.

Pathology.—The lungs become enlarged and increased in weight. There is a chronic bronchitis and bronchiectasis, with much thickening of the walls. The bronchial glands enlarge and connective tissue increases in the interlobular septa, resulting in inelasticity and emphysema. The pleura becomes thickened.

Symptoms.—Are those of bronchitis, bronchiectasis and emphysema, with muco-purulent expectoration containing the particles or stains of the inhaled dust.

Treatment.—Is that of the diseased conditions mentioned. Change of occupation is imperative, with abundance of fresh air, and all possible measures to improve the general health.

PULMONARY CARCINOMA.

Definition.—Cancer of the lung may be primary or secondary, but is usually the latter, and all varieties are found.

Etiology.—The cause is the same as of cancer elsewhere. This development, however, is not common. It may occur at any age except in the very young. Heredity is an important causative factor. Usually develops as secondary to cancer of the breast, but may follow cancer in any other part. Takes its origin in the epithelial and glandular structure of the bronchial mucous membrane.

Pathology.—In frequency, the variety most usual is the medullary or encephaloid, scirrhous less often, epithelioma or melanotic very rarely. The disease usually develops as nodular tumors, multiple in character and appearing in several places at once. By coalescence a large tumor is formed involving a good portion of a lobe. The bronchial glands become enlarged, the pleura is studded with nodules, pleurisy develops and effusion usually takes place. Death, as a rule, occurs before extensive pulmonary involvement takes place, but if the patient survives the cancerous nodules soften, ulcerate, break down, and cavities form.

Symptoms.—There are none especially characteristic of pulmonary cancer per se. Cough, expectoration and

pain varying in intensity and location are usually present. So, if in the course of cancer elsewhere, these symptoms appear with evidence of localized consolidation, rales and pleurisy, the diagnosis may safely be made. If the cancerous tumor attain considerable size it may produce difficult deglutition, dyspnoea, aphonia, pulmonary hæmorrhage or œdema, by pressure upon the œsophagus, trachea, recurrent laryngeal nerve, or branches of the pulmonary veins, respectively.

Prognosis.—Malignant disease in this location is invariably fatal, its duration depending upon the general state and vitality.

Treatment.—Look to the diet and general care of patient. Remedies as suggested for cancer elsewhere and special medicine to relieve urgent symptoms as they arise.

PULMONARY GANGRENE.

Definition.—Necrosis and death of lung tissue. May be circumscribed or diffuse.

Etiology.—Entrance of the bacteria of putrefaction into portions of the lung tissue already degenerated by inflammatory stasis or suppuration. Underlying such a termination must be a predisposition of constitutional mal-nutrition and vital depression. Poorly nourished, half-fed, illy-clothed wrecks of humanity and those who are exposed to all the vicissitudes of weather are particularly liable, especially if they are the victims of Bright's disease, diabetes or habitual intemperance. In such persons pneumonia, bronchiectasis and tuberculosis with cavities offer the larger quota of instances.

Pulmonary embolism frequently is a cause of gangrene, either by cutting off the nutrition to a part or by carrying infection to the tissues from bed-sores, puerperal septic inflammations or suppurating caries. Another cause is the decomposition of food inhaled by the insane, idiots, or in cases of paralysis of the muscles of deglutition.

Typhus, variola, measles, glanders, pyæmia and septicæmia and animal venoms may result in gangrene.

Pathology—The lower lobes are most often affected. It may be a circumscribed area, from the size of a chestnut to a butternut, or small spots may be found scattered through the whole lung. Occasionally the entire lung may be replaced by a putrid gangrenous cavity. The affected tissue may be brownish, greenish or black, and firm or containing sanious fluid. A line of demarcation may form and the necrotic tissue soften and be expelled. The bronchial tubes are the last tissues to be affected.

Symptoms.—These vary with preceding pulmonary lesion. Sudden and great asthenia, not in proportion to the physical signs, elevation of temperature, often to a high point, and very offensive sputum suggest the presence of gangrene, where the local condition and the constitutional state are favorable. The sputum is usually thin, sanious, green, brown or black and horribly offensive. Chills, sweating, vomiting and diarrhœa accompany as well as the usual symptoms of pulmonary trouble—cough, dyspnœa, etc. There are evidences of consolidation or cavities with bronchial rales.

Diagnosis.—The characteristic, indescribable foetor of the sputum, with consolidation and excavation, the rapid course ("fœtid bronchitis" is slow and not violent), the profound cachexia, with the underlying condition and history of the case, establishes the diagnosis.

Prognosis.—Is always unfavorable. Invariably fatal in the diffuse form and rarely a recovery in the circumscribed cases. Usually fatal within a week of the initial chill. Death is due to exhaustion, hæmorrhage, or following a peritonitis, pleurisy or pneumo-thorax, due to perforation.

General Treatment.—Should be directed to the patient's strength until the necrotic tissue is cast off. Rich, highly nutritious dietary, eggs, milk and broths, with stimulation. Sprays by inhalation to secure antiseptics of the cavities affected, carbolic acid, iodine, creosote or thymol. Incision of the cavity with drainage is to be considered if the necrosis is localized.

Remedies.—*Arsenicum album*.—Great exhaustion, restlessness, nightly aggravation, mental anguish, thirst, high fever, burning pains, vomiting, dark offensive diarrhœa, dyspnœa and thoracic distress, all make this a remedy which is often most suitable.

Echinacea.—With its foul discharges, low septic symptoms, chilliness, nausea and depression. It is a remedy particularly suitable to septic, malignant and gangrenous affections. Give 5 to 10 drops of the tincture every two hours.

Lachesis.—Blood decomposition, low septic state, system profoundly poisoned, great prostration, throat sensitive, cyanosis, skin bluish or purplish, worse after sleep, relief after offensive expectoration.

PULMONARY ABSCESS.

Etiology.—Abscess of the lung may arise from a variety of causes. 1st. Those following local inflammation of various kinds in the lungs themselves. Wounds, operations, suppurative conditions, etc., in the respiratory tract above the lungs, the infective matter may be inhaled, causing local suppuration. 2d. Embolic, abscess from infective embolisms which are carried into the lung vessels from a purulent condition elsewhere. 3d. Traumatic, from perforating wounds, foreign bodies, or a perforating abscess of the liver. 4th Those suppurations occurring during the course of tuberculosis.

Symptoms.—When in the course of any disease likely to cause pulmonary abscess local symptoms of the lung appear, or those already present become aggravated, with cough, impeded respiration, higher fever, rigors, profuse sweats, great prostration, purulent expectoration, etc., especially if a localized consolidation, followed by cavity, can be determined, with discharge of a large amount of pus, the diagnosis is reasonably certain.

Diagnosis.—Abscess may be differentiated from gangrene by the horrible foetor and necrotic tissue of the latter. From empyema by the previous history of pleurisy and the greater amount of pus. From hepatic abscess by the pus of the latter showing bile and being brownish in color.

Prognosis.—Is always grave, though may recover if carefully nursed and treated. In hepatic or pleuritic abscess discharging through this channel the prognosis is bad.

General Treatment.—Build up and sustain the patient's strength to withstand a long period of suppuration. Give a highly nutritious diet with stimulation. Drainage may be possible.

Remedies.—*Arsenicum iod.*, *China off.*, *Hepar sulph.*, *Lachesis*, *Silicea*, are most frequently indicated.

PULMONARY SYPHILIS.

Etiology.—Is a rare affection. Due to general syphilitic infection, either hereditary or acquired, and occurs as follows:

1st. *White pneumonia* of the foetus, in which in the foetus or new-born the lung is firm, heavy and airless, with greatly indurated alveolar walls. The color is whitish gray, the so-called "white hepatization."

2d. *Gummata* from the size of a pea to a goose egg may be scattered throughout the lung.

3d. *Fibrous pneumonia* beginning at the root of the lung and extending along the bronchi, with gummata. Is limited to this area.

Symptoms and Diagnosis.—The former are not characteristic and the latter is most difficult. The symptoms are usually those of bronchiectasis or chronic interstitial pneumonia. In those cases suffering from syphilis in general, with obscure pulmonary symptoms of fibrosis or bronchiectasis and no bacilli are in the sputum, syphilis may be assumed.

Treatment.—Consists of the same measures and remedies as are indicated for the management of syphilis elsewhere.

PULMONARY ECHINOCOCCUS.

Definition.—Cysts are found in the pleura and lungs by the development of the *tænia echinococcus*. This is a small worm of three or four segments and a head having four sucking surfaces and a roseola of hooklets. Their development causes the formation of large numbers of multiple cysts containing fluid. Commonly called Hydatids.

Symptoms.—If small, their presence, either in the lungs or pleura, causes few symptoms, but as they grow and multiply, symptoms of compression, inflammation, cavities connecting with the bronchi and expectoration of fluid containing the hooklets. During life, unless the hooklets are found, it is usually diagnosed as phthisis or gangrene.

Treatment.—Is strictly surgical. Open and drain if possible. Injections into the sac are also used.

IV.

Diseases of the Pleura.