Neuroses:

Apoplexy;
Paralysis;
Epilepsy;
Catalepsy;
Hysteria;
Chorea;
Tetanus;
Asthma;
Angina pectoris;
Laryngismus stridulus;
Convulsions;
Neuralgia;
Delirium tremens;
Insanity; viz.:
Mania;
Monomania;
Melancholia;
Dementia.

Ataxiæ (unclassifiable diseases):

Hemorrhages;
Local dropsies (ascites, etc.);
Jaundice;
Dyspepsia;
Cholera morbus;
Colic;
Diarrhœa;
Worms, etc.

PART II.

SPECIAL PATHOLOGY AND PRACTICE OF MEDICINE.[1]

HAVING endeavored, on our previous pages, to state, with brevity, what we regard as the essential *principles* of the science of medicine, we proceed to apply these, in the same condensed manner, to an account of the diseases to be dealt with in *practice*. Our purpose will be, to give a brief and clear description of each disease, with its causation, diagnosis, pathology, and treatment, according to our estimate of experience and authority.

The classification of diseases followed in the succeeding pages is chiefly clinical; though based upon the pathological nosology already stated (Part I., Sect. IV.). Such an arrangement finds sufficient justification in its convenience.

AFFECTIONS OF THE RESPIRATORY ORGANS.

PNEUMONIA.

Definition.—Inflammation of the substance of the lung.

Varieties.—According to its *seat;* single, double, lobular. According to *causation;* idiopathic, from cold and wet; traumatic, from injury; caseous or tuberculous, in phthisis; and typhoid pneumonia. Except in phthisis, we scarcely meet with chronic pneumonia; what is commonly *called* so being induration *following* acute pneumonia as an effect, not a continuation of it.

Symptoms and Course.—A chill or stage of depression, followed soon by fever, with oppression in breathing, dull pain (not always present) in the chest, and sometimes short cough. Delirium is common. In children, vomiting frequently occurs. Temperature of the body high, especially on the 4th or 5th day; sometimes, in the evening, reaching 104° or 105° Fahr. in the axilla. Secretions scanty, as in other febrile states. Urine containing an excess of urea, but deficient especially in the chlorides, in the middle period of the attack. Expectoration commences about the third day usually, the sputa being composed of mucus, lymph, and blood mixed together, making the *rusty* sputum of pneumonia. In this an excess of chloride of sodium will be found by testing with nitrate of silver.

[1] NOTE TO PART II.—The letter F, followed by a *number* in parenthesis, indicates a reference to a formula, of that number, in the latter part of the book.

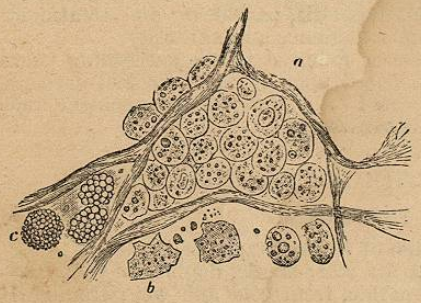
The height of the attack is generally reached between the 5th and the 7th day; after which the temperature declines, and, in favorable cases, all the symptoms subside. In others, oppression in breathing, and prostration increase; cough deepens, and expectoration becomes more abundant, at last purulent. Death seldom occurs before the sixth, and may be as late as the twentieth day.

Stages.—1st, that of congestion or engorgement, and the commencement of exudation; 2d, that of exudation and red hepatization; 3d, that of gray hepatization, softening, or purulent infiltration.

Physical Signs.—These differ in the three stages. In the first they are, moderate dulness of resonance on percussion over the affected lung, and, on auscultation, after the first day or two, the *fine crepitant* râle.

In the second stage, decided dulness on percussion, no râle, but instead, *bronchial* respiration and bronchophony; with increased vocal fremitus. In the stage of softening or suppurative infiltration (gray hepatization), dulness on percussion, and coarse crepitant or mucous râle.

Fig. 56.

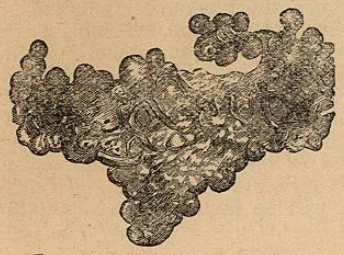


Red hepatization (magnified).

When *resolution* follows the second stage, as in cases of recovery, the bronchial respiration gives way to returning fine crepitation (crepitus redux); and, then, the dulness of resonance on percussion also gradually disappears.

Terminations.—Resolution; death in the second stage from asphyxia; death from exhaustion in the third stage; recovery after the third stage (uncommon); abscess; gangrene of the lung.

Fig. 57.



Lung-tissue in red hepatization.

Complications.—Pleurisy (pleuro-pneumonia); capillary bronchitis; tubercle.

Sequelæ.—The most frequent is that persistent consolidation of the lung called by some chronic pneumonia. Tubercular deposit, sometimes even acute phthisis, may follow pneumonia, in persons predisposed to it.

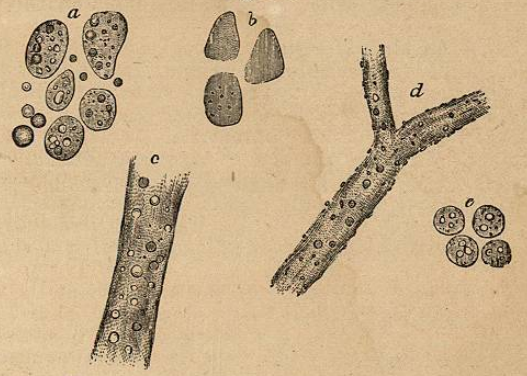
Morbid Anatomy.—The *lower* or *middle* lobe is almost always

the seat of the disease. Should death take place (as it rarely does) in the first stage, the lung would be found somewhat swollen, dark-red, inelastic (splenization), and filled with blood or bloody serum. It will still float in water, though heavier than healthy lung. It is easily torn.

In the second stage, of hepatization, the lung is no longer spongy, but presents considerable resemblance to the liver; although a finger may be easily thrust through it. When entirely hepatized, it will not float in water, the air being displaced from the cells by the exudation of coagulable lymph.

The third stage consists in the degeneration (in the absence of more favorable *resolution* by absorption) of the exudation. This occurs by *granulation*, *softening*, and *suppuration*. Mostly the latter is infiltrated; occasionally an abscess forms. In gray hepatization, the lung is solid, impermeable to air, with a granite-like appearance of red and white points on section. It sinks in water, but is more easily torn, or crushed into a pulp, than in the second stage. *Caseous* pneumonia is now regarded by many as a frequent beginning of phthisis; the exudation neither being absorbed (resolution) nor converted into pus, but undergoing a slow cheesy degeneration; "tuberculous infiltration."

Fig. 58.



Elements in gray hepatization. (Da Costa.)

Chronic pneumonia, of authors, is rather a *sequela* of the inflammatory affection; consisting in induration or consolidation of the affected portion of lung, the exudation not undergoing, for a considerable time, either absorption or degeneration. It is not frequent, in the absence of tubercular deposition.

Diagnosis.—The only affections with which pneumonia is likely to be confounded are pleurisy, bronchitis, and phthisis. In children, collapse of the lung has been mistaken for lobular pneumonia.

From pleurisy, it is known by the absence of the sharp pain belonging to the latter, and by the crepitant râle and rusty sputa.

From bronchitis, by the dulness on percussion, râle, bronchial respiration, and bronchophony. From phthisis, by its sudden onset, fine crepitation, and sputa, as well as by the acute violence of the attack. *Latent* pneumonia sometimes complicates fevers, etc.

Prognosis.—Simple pneumonia, of one lung, in a young and previously healthy person, ought, under favorable circumstances and judicious treatment, always to be recovered from. In the aged, it is dangerous; and double pneumonia is so at all periods of life, though good recoveries do occur. It is double in about one case in eight.

Among the unfavorable signs—most of which are obvious—are expectoration of pure blood in the first stage, and albuminuria in the second.

Pathology and Nature.—Ordinary pneumonia is a phlegmasia; with the usual elements of general pyrexia or fever, local hyperæmia, and local exudation. As in other phlegmasiæ, the relation of these to each other is not easily determinable. Is the local affection always the first thing, *causing* the fever, or is there a blood disease first, producing both the fever, and the local affection? In traumatic pneumonia, it is plainly the former. In other cases, after exposure to cold and wet, we may suppose it to be both; but the primary step of the actual inflammation is probably the local disturbance in circulation, functional action, and nutrition.

Causation—As already intimated, cold, suddenly or partially applied to the body, especially to the chest, is the most common cause of pneumonia. But the previous state of the health, and especially, also, latent tubercle, may predispose to it. So, in certain regions, does the influence of malaria.

Treatment.—This remains to be a *quæstio vexata.* Having considered already (General Therapeutics) the principles involved, my conclusions may be briefly stated. I am convinced by experience that prompt and moderate "antiphlogistic" treatment may greatly lessen the danger of pneumonia, if not shorten its duration.

Probably five cases in six would recover without the abstraction of blood; the sixth might die for want of it. I believe that the mortality of pneumonia has increased in Philadelphia and elsewhere since bloodletting has been so generally abandoned.[1] But bleeding from the arm, if resorted to, should be done but *once;* not later than the *third* or *fourth* day; and it may be moderate in amount. Old persons and those of feeble system will neither bear nor require it.

Cupping between the shoulders may, in many cases, take the place of venesection; in some, it may follow this. The early administration of a vigorous purgative, as Epsom salts, or citrate of magnesium, is proper in the absence of any special contra-indication.

[1] The above language expresses my very strong conviction. The late Dr. L. P. Gebhard, of Philadelphia, informed me, that in a large practice, of more than half a century, he had never lost a case of *simple* pneumonia; his treatment being (according to cases) "moderately antiphlogistic," as above described.

Tartar emetic [F. 1][1] in the dose of one-eighth to one-quarter of a grain for an adult, every two or three hours, may be continued during the height of the febrile stage. For this, as for bleeding, the indications are to be found not in the physical signs of pneumonia, but in the general condition of the system; not in the crepitant râle, but in the hot skin, hard or else oppressed pulse, pain and dyspnœa, and more or less darkly flushed face. After the height of the attack, small doses of ipecacuanha [F. 5] may be substituted for the antimonial; or nitrate of potassium [F. 4], gr. x, every two hours. Some practitioners (as J. Lewis Smith)[2] give, in place of antimony, tincture of veratrum viride, in small doses, watching its effects, and withdrawing it when the pulse has been sufficiently reduced. Murchison sometimes uses tincture of aconite, with liquor ammonii acetatis. Dr. E. C. Gehrung, of Denver, Colorado (*St. Louis Med. and Surg. Journ.*, November, 1873), urges the importance of *rest* to the inflamed lung; which he endeavors to secure by passing a broad bandage around the chest, over a layer of cotton batting. Where but one lung is affected, the idea seems reasonable. A broad piece of *adhesive plaster*, unilaterally applied (Roberts), will answer as well for the same purpose.

Asthenic pneumonia requires a different treatment; and the same will apply to the third or suppurative stage of all cases. Support may be required, in a few cases, even from the first; by beef-tea, wine or spirits (best with nourishment, as in punch), quinine [F. 2], or ammonia [F. 3]. In hospital, I have known more than one case to recover under this plan *alone;* but they are the exceptions.[3] Some cases in which bleeding or cupping will be proper in the first stage before the fourth day, may require beef-tea in the second stage, and quinine later. A large blister over the affected part is generally useful about the fifth, sixth, or seventh day of the attack.

Varieties of Pneumonia.—When complicated with pleurisy or bronchitis, no important modification of treatment is called for. *Tuberculous* pneumonia requires careful husbanding of the resources of the economy. Loss of blood is then rarely proper; if at all, it must be local only, and in minimum quantity. The necesity for the analeptic treatment of the tubercular diathesis is paramount. Dry cups, blisters, and counter-irritant plasters, or croton oil or tartar emetic ointment externally applied, are then suitable. Warm poultices, as of Indian or flax-seed meal, with or without the addition of mustard; or carded wool, covered by India-rubber of oiled silk, kept on the chest day and night for a time, are often very useful, especially in children.

Traumatic pneumonia, following an injury, is not common. It calls for no particular difference of treatment.

Typhoid pneumonia is a term not always uniformly applied. It

[1] F., with a number, in parenthesis, refers to a formula in the collection at the end of the book.

[2] On the Diseases of Infancy and Childhood: Philadelphia, 1870.

[3] Dr. A. Patton, of Indiana, reports the treatment, by himself and others, of three hundred and nine cases of pneumonia, of all grades, with carbonate of ammonium; 5 to 10 grains every two hours, night and day; little other treatment being used. The number of deaths was eight, or one in thirty-eight cases. —*Am. Journ. of Med. Sciences*, October, 1870, p. 374.

means, sometimes, or with some authors, inflammation of the lungs complicating typhoid fever; others include under it all cases of asthenic pneumonia. More generally, however, it designates that form of the disease in which epidemic or endemic influence has impressed a peculiar character. Malarial regions especially exhibit this, in the "winter fever" or typhoid pneumonia of our Southern States. Early and great debility, out of proportion to the local symptoms, with a tendency to low delirium, and to remittence, mark this disorder. In treatment, it bears little or no depletion, hardly even the reduction of excitement by tartar emetic or veratrum viride. Diaphoretics first, as [F. 6] ipecac, ½ grain, with, perhaps, the same amount of calomel and five or ten grains of nitrate of potassium, every three hours; or liquor ammonii acetatis [F. 7], or solution of acetate of potassium [F. 8]; then quinine, when the need of a tonic is apparent, which may be very early; with strong liquid nourishment, in a few cases stimulants, and moderate counter-irritation: these are the measures usually proper in typhoid pneumonia.

After recovery from an attack of inflammation, the lung will be for some time more than usually susceptible to conditional changes. Exposure should, then, be carefully avoided; and flannel ought to be worn next the skin. In winter a mild warming plaster, as of hemlock or Burgundy pitch, over the chest, will give good protection.

PLEURISY.

Definition.—Inflammation of the pleura.

Varieties.—Single or unilateral, and bilateral or double; idiopathic, traumatic, and secondary, *e. g.*, tuberculous, cancerous. Chronic pleurisy, so called, is merely the consequence of an acute attack.

Symptoms and Course.—Generally, after a chill or cold stage, sharp pain in the side, impeded and accelerated respiration, short, sharp cough, and fever. The pain centres in the infra-mammary or lower axillary region; it is often intense, and is increased by a long breath, by coughing, pressure, or lying on the affected side. Dr. Peacock asserts[1] that in many cases the patient suffers only discomfort, with little pain and no fever. I have met with but one or two such instances, to which with propriety the term *pleuritis* rather than *hydrothorax* should be applied. The pain and fever lessen after effusion has occurred; but the dyspnœa may then be increased. It is, after that period, most comfortable to lie on the diseased side, so as to allow of free breathing by the other lung. Acute pleurisy is often recovered from without any considerable effusion. When the latter does occur, absorption mostly follows. If not, life is endangered by interference with respiration. At first serous, constituting one form of **hydrothorax,** the fluid may become purulent; this is pyothorax or **empyema.** The term *false* empyema is given to a collection of pus in the pleural cavity from the rupture of an abscess in the lung. **Pneumothorax** is the accumulation of air in the cavity of the pleura; **hydro-pneumothorax,**

[1] Brit. Med. Journal, July 20, 1872.

of water and air together. Both of these are most common in tuberculous pleurisy, *i. e.*, in the course of a case of pulmonary phthisis.

Stages.—In severe pleuritis there may be, 1, the adhesive; 2, the effusive; 3, the suppurative stage. In favorable cases the 3d stage is that of absorption.

Physical Signs.—Of the 1st stage, deficient elevation of the ribs in breathing, feeble respiratory murmur on the affected side, and *friction*-sound. 2d stage, dulness of resonance on percussion, bronchial respiration, bronchophony, sometimes *ægophony.* When the effusion becomes very copious, bulging of the side occurs, with suppression of respiratory sound and of vocal resonance and vibration, and exaggerated or puerile respiration on the sound side. Displacement of the heart may take place if the effusion be on the left side; of the liver if on the right. There is no physical sign by which empyema can be distinguished from serous effusion; but irritative fever usually accompanies empyema.

Absorption following extensive effusion allows *retraction* and *depression* of the chest on that side, from the slow or imperfect expansion of the lung. Then return, first, bronchial respiration and voice, or ægophony, afterwards gradually the normal respiratory murmur. Sometimes, from adhesions of false membrane over the lung, permanent depression of the thorax on that side is left.

During effusion, its fluid character as well as extent may be shown by percussion in different positions. Sitting up, it falls forwards, and rises to a higher line in front; lying on the back, the dulness, from gravitation, may fall much lower in the anterior region. Sometimes adhesions prevent this. *Succussion*, or sudden shaking of the chest of the patient, may produce an audible splashing, if the ear be upon or near the affected side. By ocular inspection and measurement, the changes in the amount of the effusion may be estimated from time to time.

Terminations.—Pleurisy may sometimes be "nipped in the bud" at an early stage by appropriate treatment; that is, prompt resolution of the incipient inflammation may be effected. The other terminations are, serous effusion, which may vary from an ounce or two to quarts, gradually absorbed altogether; the same, slowly and incompletely absorbed, leaving collapsed lung; death, in double pleurisy, by asphyxia from excess of fluid; and empyema, often, but not always fatal by slow exhaustion.

Complications.—Pneumonia, tubercular deposit, inflammation of the liver (bilious pleurisy).

Sequelæ.—What authors call *chronic pleurisy* is the sequela of acute pleuritis. Its results and terminations have been above named.

Morbid Anatomy.—In the early period, general redness and vascular injection of the pleura, with bands of whitish and more or less translucent or opaque coagulable lymph, causing adhesions of the pulmonary and costal pleura. Later, serous, sanguinolent, or purulent effusion, in variable quantity; sometimes displacement of the heart, lungs, and liver, and bulging of the ribs and intercostal spaces.

Diagnosis.—From pneumonia, pleurisy is known in the height

of the acute attack, by the sharpness of the pain, the friction-sound, and absence of crepitant râle and of dulness on percussion. After effusion, especially by the change of the line of dulness with change of position, sitting and recumbent; by the bulging; and by the degree of diminution of vibration of the walls of the chest when speaking.

From intercostal neuralgia, pleurisy is distinguished by the absence of fever and friction-sounds in the former, and the non-increase of the neuralgic pain upon inspiration. Congestion, in some rare cases, attends neuralgia; the diagnosis is then more difficult. In intercostal muscular rheumatism, there is slight increase of pain in breathing deeply, but also as much in moving the arms; the pain is much less acute, and the attack is generally without fever.

Prognosis.—Pleurisy is rarely fatal; though death may occur, from very abundant effusion in bilateral pleuritis, or, with empyema in the unilateral, through gradual exhaustion.

Causation.—Exposure to cold and damp is the ordinary exciting cause of "idiopathic" pleurisy. Fracture of the rib, punctured wounds, etc., may cause traumatic pleurisy. In the course of phthisis, it not uncommonly occurs by extension of disease from the lung. Cancer of the chest may produce it in an analogous manner.

Treatment.—In young and vigorous persons still more confidence may be placed in early antiphlogistic treatment than in pneumonia. When high fever and constant severe pain occur, bleeding, in such patients, on the first, second, or third day, should be the general rule. Leeches or cups may follow, or be used instead of venesection in doubtful cases. Tartar emetic, after a free purge, may be given, $\frac{1}{8}$ to $\frac{1}{4}$ of a grain every two or three hours, with $\frac{1}{2}$ to 1 grain of *opium*. Many practitioners add calomel, $\frac{1}{2}$ grain to 1 or 2 grains every two or three hours. [F. 9.] When fever subsides, or vomiting occurs, the antimony should be withdrawn; the opium and perhaps the calomel may be continued, while the pain lasts—carefully avoiding over-narcotism by the former and salivation by the latter.

Dr. Anstie prefers the early *hypodermic injection* of acetate of morphia; the side being then enveloped in a hot poultice. Dr. F. T. Roberts[1] advises maintaining the affected side at rest by strapping it with wide strips of *adhesive plaster*.

As soon as the heat of skin has considerably abated, if the pain continues, a large blister should be applied over the affected part.

For the *effusion*, diuretics, as squill [F. 10], juniper berry infusion, or compound spirit [F. 11], acetate or bitartrate of potassium [F. 12], etc., may be used. Iodine, in Lugol's solution, and iodide of potassium alone, are often advised. Anstie relies more on tincture of chloride of iron. Repeated blistering sometimes has excellent effect. Purgatives seem to be much less effective in removing pleuritic effusion than in carrying off that of ascites, or anasarca. Dr. Sutton, of the London Hospital, insists on the importance, as a rule, of *rest in bed*.

[1] Handbook of Theory and Practice of Medicine, 1873.

When life seems to be threatened by exhaustion from dyspnœa, owing to large effusion not becoming absorbed, *paracentesis*, or puncture of the chest, is proper. In the history of this operation, the names of Trousseau (1843), Bowditch, Allbutt, and Dieulafoy have been most prominent. Dr. Bowditch has used Wyman's apparatus, which is a trocar, with a silver canula having a stopcock, and capable of being connected with a syringe by an intermediate piece, also having a stopcock, both cocks acting the same way. The operation is performed while the patient is sitting up, if able, or lying over the edge of the bed. The puncture is made somewhere between the sixth and tenth ribs (Bryant prefers the sixth or seventh intercostal space; Laennec, Stokes, and Walshe have advocated the fifth), just behind their angles; making sure first of the position of the liver and spleen, so as to avoid them. Insert the instrument (rather quickly) near the upper edge of the lower rib, raising its point as it goes in.[1] When the trocar is withdrawn, the fluid may be *gradually* removed by the double-cocked syringe with safety to the slowly expanding lung. The operation may need to be repeated, even several times in the same patient. The occurrence of albuminous expectoration after thoracentesis has given rise to considerable debate in France.[2]

The grooved needle or exploring trocar (T. Davies) is often used to ascertain the nature of the contents of the chest. Blachey, of Paris, prefers a very fine "capillary" trocar for the operation of thoracentesis. Dieulafoy's *pneumatic aspirator* has attracted much attention. It does appear to be an improvement upon all apparatus so far employed for the same purpose; reducing the danger of puncturing the cavities of the body to a *minimum*. When pus is present (empyema, pyothorax) in considerable amount, "drainage" may be resorted to. Following the grooved needle or trocar, a fine long iron probe, somewhat bent, is passed through to the lower and back part of the pleural cavity, against the intercostal space. Being felt there, an incision is made upon it; a strong silk thread is passed through its eye, and then drawn through the first opening. After this, draw in a drainage tube of India-rubber perforated with many holes; both of whose ends hang out and are to be tied together. Sometimes, by the tube, the cavity may be *washed out*, with water, or dilute astringent or antiseptic solutions. Dr. Bowditch latterly (1873) has expressed a preference for a *free incision in an intercostal space*, low down in the back, instead of tubular drainage, for empyema. Such an opening may be kept open with lint, as long as may be needful.

In chronic cases of pleuritic effusion or empyema, the strength of the patient requires usually to be supported by good diet, and sometimes by tonics. This, in empyema, is often the most important part of the treatment.

ABSCESS OF THE LUNG.

In rare instances, inflammation of the lung, active or *latent*, may terminate in abscess. Before rupture, dulness on percussion,

[1] Dr. Leale, of New York, uses a scalpel and male catheter, instead of the trocar and canula.
[2] Le Mouvement Médical, 1873.

bronchial respiration, and dyspnœa proportioned to the size of the abscess, are present. When an opening occurs, allowing the matter to escape into the bronchial tubes, the rather sudden commencement of purulent expectoration should attract attention. Then the physical signs of a *cavity* are discoverable by percussion and auscultation; amphoric or tympanitic resonance on percussion, cavernous respiration, metallic tinkling, etc., varying with circumstances. As is the case with pleuritic empyema, pulmonary abscess may communicate externally by a spontaneous opening.

The principal importance of abscess of the lung consists in the possibility of mistaking it for phthisis. The points of difference will be alluded to in connection with that disease.

PULMONARY GANGRENE.

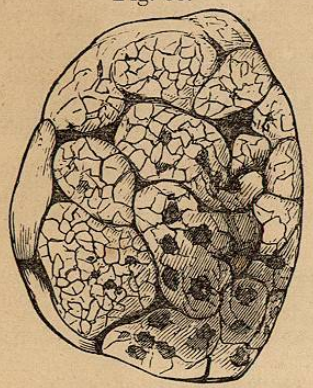
This may occur in pneumonia from extreme violence of the inflammation, or from a depressed state of the system; also from cancer within the chest, pyæmia, etc. It is rare, but more common than circumscribed abscess of the lung. Unless very narrowly limited, pulmonary gangrene is always fatal. Its signs are, coarse, mucous râle, taking the place of the vesicular murmur in the lower part of the lung, with copious brownish and offensively *fetid expectoration*, dyspnœa, and great *prostration*.

In bronchitis, occasionally, temporary fetor of the expectoration and breath may simulate gangrene; but transiently, and without the above symptoms.

The treatment of pulmonary gangrene must be, of course, supporting and antiseptic. Alcoholic stimulants, rather freely given, will be proper, with concentrated liquid food, as beef-tea. Sulphite of sodium (ten grains in solution every three hours) may be tried; or chlorine water, a teaspoonful or two every two or three hours; or carbolic acid, one drop in solution every three or four hours.

EMPHYSEMA OF THE LUNG.

Fig. 59.



Vesicular emphysema.

This is dilatation of the pulmonary air-cells of one or both lungs. It may accompany prolonged asthma, or may follow chronic bronchitis. Sometimes it aids in producing dilatation of the heart. Its symptoms are, dyspnœa, and when extensive, blueness of the lips, cyanosis, from interference with the circulation through the lungs; in many cases wheezing respiration.

There has been much controversy as to whether dilatation of the air-cells is produced by excessive distension during inspiration, or by obstruction to the expiratory movement. The experiments of Hutchinson have made it almost certain that the latter is the general rule; but probably both modes of explanation may apply to different cases.

The physical signs of emphysema are, bulging of the chest, increased clearness of resonance on percussion, and feeble inspiratory murmur with prolonged expiratory sound; sometimes displacement of the heart or liver. It is most easily mistaken for pneumothorax. But, in the *latter*, the resonance on percussion is more tympanitic, the inspiratory murmur still feebler, or quite absent, and there is no prolonged expiratory sound; besides which, the *concomitants* of pneumothorax usually serve to distinguish it.

Cirrhosis of the lung and *pulmonary hydatids* are rare affections, difficult of diagnosis, for which the student may be referred to more extended treatises. Hydatids of the lungs are said to be not uncommon in Australia. Dr. L. D. Bird,[1] of Victoria, claims to have cured a number of cases by tapping the cysts (mostly at the base of the lung), and then administering anti-parasitic medicines; as bromide or iodide of potassium and kameela.

COLLAPSE OF THE LUNG.

In hooping-cough or in severe bronchitis, especially in children, obstruction of a considerable air-tube may lead to an exhaustion of air from the cells supplied by it, and a return of that portion of the lung to the unexpanded condition (atelectasis) of fœtal life. The same state may occur under other circumstances, from debility. It was formerly always mistaken for lobular pneumonia. It is usually fatal, unless very much limited.

Signs of it (often difficult of determination, however) are, moderate dulness on percussion, with absence of the murmur of respiration; and, in some cases, an inward motion or recession of the lower ribs during the effort at inspiration.

BRONCHITIS.

Definition.—Inflammation of the mucous membrane of the bronchial tubes.

Varieties.—Acute and chronic; general and capillary; plastic, rheumatic, and syphilitic bronchitis.

Symptoms and Course.—Systemic depression, followed by fever; tightness and soreness of the upper and anterior part of the chest; cough, at first short, dry, and tight; later, deeper and looser, with expectoration; the latter being at first mucous, in rare instances pseudo-membranous, in severe cases at a late stage purulent.

Capillary bronchitis is marked by greater dyspnœa and tendency to early depression and prostration. It is most common in young children and in the aged; and is considerably more dangerous than ordinary acute bronchitis.

Plastic or fibrinous bronchitis is more frequent in children than in adults, but is comparatively rare (Lebert) in the aged.

Chronic bronchitis is often free from febrile symptoms; the cough and expectoration, with slight dyspnœa, characterizing it.

Stages.—Ordinary bronchitis may be divided in its progress into,

[1] London Lancet, July 1, 1871.

1st, the stage of *diminution* of secretion; and 2d, that of *increase* and *perversion* of it.

Physical Signs.—No dulness on percussion, except in case of collapse of part of a lung from obstruction, or extensive *capillary* bronchitis; sonorous rhonchus and sibilus, generally, though not quite always, on both sides of the chest; varying from time to time, in seat, character, and loudness. In capillary bronchitis, extended mucous, crepitant or subcrepitant râles, closely resembling the fine crepitation of pneumonia.

Terminations.—Acute bronchitis may end in death from apnœa, in the first or second stage; or in chronic bronchitis; but most generally in recovery.

Complications.—Asthma; pneumonia; bronchial dilatation; pulmonary collapse. *Broncho-pneumonia* is especially common in early life. Disease of the heart (especially of the left side) is, not rarely, attended by chronic bronchitis, as well as by attacks of pulmonary congestion.

Morbid Anatomy.—General redness and congestive tumefaction of the bronchial membrane; with more or less obstruction from mucus (in chronic cases pus), epithelium, and, rarely, casts of the tubes of plastic lymph.

Diagnosis.—No difficulty exists except in distinguishing chronic bronchitis from phthisis. Absence of dulness on percussion and of the signs of excavation, are most important; the expectoration also is whiter and of less weight in bronchitis; and there is no distinct hectic fever. The *temperature* does not rise to so high a degree in chronic bronchitis as in tubercular phthisis.

Prognosis.—Acute bronchitis is dangerous in old persons and young children; seldom fatal in vigorous middle life. The capillary form is always most serious; death taking place sometimes from the 10th to the 12th day. Acute fibrinous bronchitis, according to Lebert, has a mortality of 1 in four or five cases. Chronic bronchitis is not often fatal, even by exhaustion; but it may last an indefinite time, even many months.

Causation.—Exposure to cold is the most frequent cause. In some employments, as needle-grinding, cotton-spinning, etc., solid particles inhaled cause bronchitis by mechanical irritation. Transference of rheumatism occasionally induces it in the rheumatic diathesis; and it is one of the possible manifestations of tertiary syphilis.

Treatment.—Abortive treatment of a "cold on the chest" may sometimes be effected within the first twenty-four hours, by taking at bedtime, a glass of hot lemonade, six grains of quinine, or ten grains of Dover's powder, after a warm mustard foot-bath. Should this treatment fail or be omitted, a brisk saline purgative should be given, of Epsom or Rochelle salts, or citrate of magnesium. Then, when the fever is high, cough very tight, and breast sore, tartar emetic should be advised, $\frac{1}{8}$ to $\frac{1}{4}$ grain every two or three hours [F. 1], with frequent draughts of flaxseed tea or some similar demulcent; sometimes, leeches or cut cups to the upper part of the chest. A large sinapism over the upper sternal region will aid in giving relief; and so will friction with oil of turpentine.

In milder cases, or where the strength of the stomach is doubtful, syrup of ipecacuanha, $\frac{1}{4}$ to $\frac{1}{2}$ drachm every two or three hours, will answer; and it should be continued until the cough softens and the breathing becomes easier. Then syrup of squills [or, F. 13] may follow in f. drachm doses, every three or four hours. When the cough is troublesome at night, $\frac{1}{2}$ to 1 f. drachm of paregoric [F. 15] may be added at bedtime; or through the day, occasionally, if coughing be very violent or frequent. Opiates do the most good, however, *after loosening* of the cough with free expectoration. When the fever has abated, and especially if dyspnœa continue, a blister may be applied over the sternum.

In *capillary* bronchitis, or in the ordinary form in the aged and feeble, instead of tartar emetic, the more stimulating expectorants may be required, as senega, in decoction or syrup, chloride [F. 15] or carbonate of ammonium, with quinine and beef-tea, wine-whey, or whisky punch. Inhalation of steam, alone, or from infusion of hops, sometimes soothes the air-tubes advantageously.

Dr. Bedford Brown,[1] of Virginia, in a number of cases in children, has found the early use of an emetic of ipecacuanha very serviceable; a combination of ipecac and quinine being continued afterwards. In children, especially, *warm poultices*, as of mush and mustard, over the chest, are beneficial.

Chronic bronchitis requires persevering use of counter-irritation over the chest, by croton oil (3 drops with as much of sweet oil applied nightly till a papular eruption follows), painting with tincture of iodine, or plasters of Burgundy pitch, hemlock, etc., and alternation of stimulating and alterative expectorants, and tonics. Besides squill and senega, ammoniacum, copaiba [F. 17], and chloride of ammonium [F. 16] are most frequently useful. If the system be below par, quinine, iron, and cod-liver oil are important. When secretion is very copious, inhalation of tar-vapor or of creasote should be tried. The former may be used by putting an ounce or two of tar in a cup over boiling water; so as to diffuse the tar-vapor through the chamber. Creasote, or carbolic acid, 20 or 30 drops, may be put into half a pint of boiling water, to be breathed by means of an ordinary inhaler. Dr. J. A. Lidell[2] uses by preference the *atomizer*, with a solution of 1 grain of carbolic acid in an ounce of water. When medicine fails, change of air will sometimes entirely cure.

Dr. Greenhow[3] has pointed out that patients with chronic bronchitis generally do better when much out of doors, than when confined closely to the house.

On **Hæmoptysis**, see *Semeiology;* also the articles on *Phthisis*, and on *Hemorrhages.*

ASTHMA.

Definition.—Paroxysmal and spasmodic dyspnœa.

Varieties.—*Idiopathic* and *symptomatic; dyspeptic* asthma; *hay* asthma.

Symptoms and Course.—Every night, or once a week, month,

[1] Am. Journal of Med. Sciences, October, 1870.
[2] N. Y. Medical Record, July 1, 1872.
[3] On Chronic Bronchitis, etc., London, 1869.

or year, or at irregular intervals, the attack comes on. Most frequently it is between 1 and 3 o'clock in the morning. Premonitory symptoms often are great drowsiness, or wakefulness, headache, flatulence, itching under the chin. Dyspnœa then becomes the characteristic symptom. The sufferer sits or stands up, leaning forward, and labors to breathe. The chest is expanded to its utmost, by the accessory as well as principal inspiratory muscles. The countenance is anxious, with pallor, coldness, and in severe cases lividness, of the face and hands. Perspiration is often copious. A wheezing sound accompanies respiration; giving way finally, with relief, upon the expectoration of mucus, usually rather thick, and in pellets.

The attack may pass over in a few minutes, or may last for hours; or, with some remission, days or weeks. Where asthmatic symptoms are persistent, as is not very uncommon, for years. some structural change in the organs of the chest exists; it is then *symptomatic* asthma.

Physical Signs.—Inspection shows unusual elevation of the ribs and shoulders. Placing the ear on the chest, sonorous and sibilant sounds, lound but mostly small in calibre, are found to take the place of the respiratory murmur. These sounds change their locality frequently. As the attack gives way, with expectoration, the mucous râle is heard.

Secretions.—At the beginning of the paroxysm, the urine is abundant and pellucid ("nervous urine"); for some hours after the attack has ceased, it is more scanty, and deficient in urea and chloride of sodium.

Complications.—Bronchitis; pulmonary emphysema; dilatation or hypertrophy of the heart.

Diagnosis.—Laryngeal spasm may, without care, be confounded with asthma; but the modification or arrest of the voice ought to distinguish the former. Violent bronchitis is known from it by the febrile condition. Angina pectoris, by the extreme pain, and localization of the distress about the heart. Hydrothorax, by the dulness of resonance on percussion, and absence of rhonchus.

Special exploration is necessary in each case to determine the presence or absence of pulmonary or cardiac complication.

Prognosis.—Death almost never occurs during the fit of asthma. Those subject to it often live to old age. But dilatation of the pulmonary air-cells, and enlargement of the heart, may follow in protracted cases, breaking down the health.

Pathology and Nature.—It has been made almost certain that asthmatic dyspnœa is owing to a spasmodic constriction of the smaller bronchial tubes, by tonic contraction, mostly reflex, of their involuntary muscular fibres. Perhaps the intercostal muscles and diaphragm may be sometimes involved. Savignac[1] considers *paralysis* (how paroxysmal?) of the bronchial muscular fibres more probable than their spasmodic contraction. This view is not likely to receive much support.

Causation.—Asthma is hereditary in a majority of cases. Males have it more often than females. It may occur at any age. Dr.

[1] Bulletin Général de Thérapeutique, Nov. 30, 1867.

Salter classifies cases according to their causation—1, by agencies acting upon the lungs, as fog, smoke, fumes of various things, ipecacuanha, mustard, new hay, etc.; 2, by reflex action, as irritation of the stomach from indigestion, loaded rectum, sudden emotion; 3, by pulmonary or cardiac disease. Behind all these there must be a predisposing peculiarity of constitution.

Treatment.—During the attack, our aim is to give relief, by relaxing spasm. Ipecacuanha wine, with tincture of lobelia, one-quarter to one-half fluidrachm of each [F. 18], every half hour until nausea or expectoration is produced, I have known often to act very well. Hoffmann's anodyne, in one-half drachm or drachm doses, will sometimes do great good. Some practitioners advise hyoscyamus, musk [F. 19], hydrate of chloral, or hydrocyanic acid [F. 20]. Smoking tobacco relieves in some instances; smoking cigarettes of stramonium-leaves in others. More still find comfort in breathing the air in which are burned papers which have been soaked in a saturated solution of nitrate of potassium. Inhalation of oxygen has been found beneficial by Demarquay, Andrew H. Smith, and others; and so has the respiration of *compressed air*. Inhalation of ether, nitrous oxide, or nitrite of amyl (3 to 5 drops), may be carefully used in extreme cases. Hypodermic injection of morphia (Hirtz), has sometimes given immediate relief. As an adjuvant, the warm mustard foot-bath may be employed; as well as sinapisms or dry cupping between the shoulders.

Between the attacks, endeavor should be made to rectify digestion and its tributary processes, and to invigorate the nervous system. Some cases will require blue pill, nitro-muriatic acid [F. 21], or taraxacum, bitter tonics and mild laxatives, such as rhubarb, etc. Others need iron and quinine. Iodide of potassium is highly recommended by some; conium, cannabis indica, and arsenic in small doses by others. There is reason for giving trial to the bromide of potassium in obstinate cases; most patients will bear from 10 to 20 grains of this twice or thrice daily for weeks together without inconvenience [F. 22].

Prophylaxis.—No disease is more curiously capricious in its causation than asthma. Some always have a paroxysm if they visit the sea-shore; others are more secure there than elsewhere. One cannot sleep on the first floor; another does better there than higher up. Each must learn his own peculiarities, and be governed thereby.

Dr. Whitehead, of Denver, insists,[1] after large experience, that the climate of Colorado has a remarkable influence in promoting the amelioration and cure of asthma.

Most remarkable are the annual attacks of asthma, summer[2] catarrh, autumnal catarrh, or asthmatic bronchitis, to which a few individuals are subject. I know one gentleman who for many years was obliged to arrange all his business for such an attack, which was punctual almost to a day, in the summer, and confined

[1] Amer. Journal of Med. Sciences, April, 1874.

[2] See Experimental Researches, etc., by C. H. Blackley, M.R.C.S., London, 1873. Blackley believes *pollen* to be the usual exciting cause of this affection.