

poison. In the *treatment*, salicylate of soda should be tried. Iron should be given to counteract the prolonged debility which usually follows an attack. The *prognosis* is almost always favourable.

Plague is an epidemic contagious disease characterised by enlargement of the lymphatic glands with the formation of buboes, boils, and carbuncles with hæmatemesis and hæmorrhages from the bowel, &c.; generally ending in death. A micro-organism has been found (*B. pestis*).

Glanders and Farcy are caused by a micro-organism (*B. mallei*). The former is an affection characterised by a foul discharge from the nasal mucous membrane with fever and general *malaise*. The latter occurs when the lymphatics and glands are affected alone, or it may exist along with the discharge from the nostrils. In both forms there is often, also, a pustular eruption on the skin. The face is often swelled, and abscesses may form near the joints. Glanders and farcy are caused by the inoculation of the poison from the horse, ass, and a few other animals that may be suffering from glanders. Grooms, &c., are occasionally attacked. The disease may be acute, and terminate fatally within three weeks. Some cases run a chronic course. In the treatment *mallein* may be tried.

Malarial Fevers. Intermittent (Ague) and Remittent Fevers.—The most important pathological changes are those which take place in the blood. There is destruction of the red blood-corpuscles (melanæmia), by a parasite (hæmatozoa of Laveran). The blood is hydræmic and there is hæmoglobinæmia when the infection is intense. The malarial parasites are recognised in the red blood-corpuscles, and skilled observers can distinguish those associated with the *tertian* from those of the *quartan* type. The different forms of malarial fever—intermittent and remittent—depend upon the *mode of growth* of the parasite. In chronic malaria, the pigment of the blood is found in the spleen, liver, and bone-marrow. The spleen and liver are enlarged, and in these organs there may be areas of necrosis. Capillary thromboses are found in the brain, liver, spleen, intestines, &c.

The *symptoms* in both the intermittent and remittent fevers generally begin with prodromes. There are weariness and an inclination to yawn; pains in the back and limbs; stomachic symptoms and headaches. Sometimes there is only a tendency to gastric catarrh, with slight jaundice. Other cases, again, begin without warnings.

In *intermittent* fever the onset consists of the development of the *cold stage*, followed soon by the *hot* and the *sweating stages*. In the first stage—which lasts usually a quarter to half an hour—there is a feeling of chilliness, which gradually increases, and is accompanied by shivering. The cold feeling becomes intensified, and the patient hangs over the fire or vainly endeavours to get warmth by heaping up the bed-clothes, &c., upon him. The pains in the back and limbs are generally increased, and often there is nausea and vomiting. The pulse is small, and increased in frequency, and in

tension. The temperature begins to rise at the onset of the chill. At the conclusion of the cold stage, the *hot stage* begins. At first there is a feeling of comfort. The pains are relieved, and the other symptoms are modified. Soon, however, the headache is worse and there is throbbing in the temples. The skin, instead of being blue, and the face pinched, now becomes flushed and warm looking. The pulse becomes full and strong. Vertigo and nausea are present, and there may be transient delirium. After an hour (or sometimes longer) the *sweating stage* is reached. When this occurs the fever declines, and the symptoms are relieved. The sweat is acid, and has an "animal" odour, due to the organic solids and fatty acids present. The urine contains large quantities of uric acid and urates, which are deposited on cooling. The urea is increased. The sweating stage may last twelve hours, at the end of which the patient appears exhausted. There are great variations in the character of the stages, some cases being much milder than others. After an interval, there is a repetition of the three stages. The paroxysm may be daily (*quotidian*), or on alternate days (*tertian*), and so on. Hence there are also *quartan*, *double quotidian*, *double tertian*, *triple tertian*, *duplicated tertian*, &c., &c. The duration of the paroxysm seems to be longer in the *quotidian* than in any of the other types; but it runs a shorter course—the average duration being a month to six weeks.

Sometimes in malarial subjects, instead of an attack of fever there is some other manifestation of malaria. This may be *neuralgia*, *intermittent hæmaturia*, *pulmonary hæmorrhage*, *diarrhœa*, *jaundice*, or a *skin eruption*, &c. Neuralgia is by far the commonest, and it chiefly affects the fifth nerve. The periodic nature of the attack is suggestive, and it may recur like the fever. It is usually *quotidian*. *Sciatica* and *angina pectoris* are also sometimes malarial in origin.

A *pernicious* form of intermittent fever is described. The attack may take this form when the ague follows some other disease which has reduced the vital powers of the patient. The first attacks are not generally fatal; but this result may follow succeeding attacks. The severity and nature of the symptoms have allowed of a classification into several forms, the names of which will suggest the condition. They are as follow, viz.:—the *algid* (in which there is much depression of the heart); the *choleric*; the *diaphoretic* or *sweating*; *pernicious icteric* (jaundice and "biliousness"); *nephritic* (hæmaturia and albuminuria); pneumonic; and cerebro-spinal (*Jaccoud*).

Relapses are very common during the course of intermittent fever, and they are apt to occur at the period—according to the type—at which the paroxysm would have occurred had no treatment been attempted. The result of repeated attacks is to produce in the patient the state and appearances of the *malarial constitution*. There is anæmia from loss of the red blood corpuscles; and the liver and spleen are enlarged and tender, with symptoms of functional disorder very frequently (jaundice, &c.). The ankles may be œdematous; the

skin has a yellow or earthy hue; the individual is thin; palpitation is common; the urine may be albuminous. Waxy disease may affect the organs; or pigment granulations may cause infarctions, &c., by blocking the blood-vessels (emboli). Other sequelæ mentioned are cirrhosis of the liver, dropsy, tuberculosis, mania, &c.

In **Remittent Fever** there are also the three stages, but the fever, although *abating*, does not wholly *depart* for a time. There are, however, distinct remissions, and the "bilious" symptoms are marked—jaundice being usually present. The *remissions* are either *quotidian* or *tertian*. A mild attack lasts four or five days, with all the usual conditions associated with pyrexia—coated tongue, foul breath, nausea, vomiting, headache and throbbing of the temples, &c. The severe forms have fewer remissions, and the very grave forms have delirium and stupor—and the "typhoid" state, with hæmorrhages and sometimes choleraic symptoms, may supervene. The disease—even in its grave form—is not usually fatal in robust subjects. Yellow fever may be mistaken for remittent; but the "black vomit," and the examination of the blood, set the diagnosis at rest.

The **prognosis** in malarial fever—intermittent or remittent—is not usually unfavourable. The first seizure is generally the worst; and with prophylactic treatment, succeeding attacks are modified.

In the treatment of intermittent fever, *quinine* has displaced all other remedies. It should be given in large doses (twenty grains), about three hours before the paroxysm, when it is possible. It should be continued, in smaller doses, throughout the seizure. The hypodermic injection of pilocarpine (one-twelfth to one-sixth of a grain of the nitrate) is also recommended for the chills. If the gastric symptoms be severe, a grain of calomel, followed in a few hours by a saline purge (Seidlitz powder), is very useful. Phosphate of soda may be given occasionally. Eucalyptus is a good anti-periodic. For the chronic malarial constitution, no remedy is better than *arsenic*.

Quinine is useful as a prophylactic. Five grains in the morning is the usual dose; and exposure to fatigue, to intense heat, and to the early morning and night air of malarial districts, is to be avoided. For the enlarged spleen, the ointment of the red iodide of mercury is highly beneficial. A piece the size of a bean should be rubbed into the skin, in the splenic region, for as long as the skin will permit. In the treatment of the remittent form of malarial fever, quinine is also the best remedy. It should be given at once—a large dose—and continued in smaller doses.

Yellow Fever.—This fever is a specific infectious disease; but no specific micro-organism has, as yet, been found. It occurs only as an epidemic in climates where the temperature averages above 70° F.: and it is often endemic on the sea-coast in warm countries. Cold destroys the action of the germ. Filth, and hygienic evils—as bad drainage, &c.—favour its development. It is common on board ships when there has been overcrowding.

The pathological changes are of a general description and consist chiefly of congestions and extravasations of blood into organs and serous cavities. The stomach is inflamed, the liver is yellow in colour, and fatty degeneration is present. The skin is of a deep mahogany colour. The incubation period is one to three days.

The symptoms generally begin abruptly with intense pain in the back and high fever. Sometimes there is a prodromic period in which there is general *malaise*. The temperature is at its highest in about twenty-four hours, and it begins then to fall (lysis), and becomes normal at the fourth day. During this stage the stomach is irritable, the tongue coated, the bowels generally constipated, and vomiting is easily excited. Delirium may be present, and jaundice begins to appear. Often at this stage there is remission or even a complete intermission of the fever with favourable symptoms. This may last from one to four days, and sometimes it is entirely absent. Then the temperature rises again, 104° F. being reached on the second day, and this is accompanied by cramping pains. The jaundice becomes marked and the "black vomit" appears. Hæmorrhages are present; and there is usually complete suppression of urine with albuminuria and uræmic symptoms. Should the case take a favourable turn, the temperature falls abruptly, and the above symptoms gradually disappear. Several forms as "the algid, sthenic, hæmorrhagic, and typhous" are described.

In the treatment of yellow fever, isolation is important. There is no specific, hence the management only consists of the treatment of the symptoms as they arise, as indicated in fevers generally. Careful disinfection, and quarantine arrangements, must be enforced.

Cynanche Parotidea—Mumps.—This affection occurs as an epidemic usually, and it consists of a specific inflammation of the parotid or other salivary glands. Sometimes the inflammation attacks the breasts or testicles, and especially is this likely to occur during subsidence in the parotid (*metastasis*). There is fever and pain with the swelling, and the face soon assumes a broad and peculiar appearance. The parts are tender to the touch. The stomach is disordered, and the breath foul. Swallowing is difficult. The glands very seldom suppurate, and the subsidence is generally complete within a fortnight. The incubation period extends from five to twenty-four days. The *treatment* is to give mild laxatives, to apply hot fomentations, and to keep the body warm. A diaphoretic mixture may be useful.

Influenza.—This disease occurs as an epidemic, which from time to time spreads over large areas of the habitable globe. It appears to be the result of a germ,* which resists all efforts at extinction, and when once established it remains active—at least such has been the experience of the late and the past epidemics—for two to four years, disappearing for months and reappearing in the autumn,

* Pfeiffer's bacillus (?).

and even continuing through the winter if the latter should be a mild or "open" one. It is doubtful if the disease be actually communicable from one person to another. The period of incubation is short, and one attack does not protect from a second.

The symptoms begin suddenly with chill and fever, intense frontal headache, nausea and vomiting, and severe pains in the back and limbs. The temperature rises as high as 103° or 104° Fahr., during the first or second day, and remains, with a remission in the morning, for two or three days, when it returns to the normal (crisis)—if there should be no complications. Often there is acute delirium. The pulse is sometimes slow, and often there is great cardiac depression. The attack may terminate in a burst of perspiration; or in the discharge of a large quantity of pale urine; or in diarrhoea. The patient is left in a very exhausted state, and it may be three or four weeks before the feeling of excessive weakness passes away. Relapses are very common, especially if the patient leave his bed too soon. Sometimes the disease has not this abrupt course, but begins gradually with slight fever and aching in the limbs and back. This form is usually accompanied by catarrhal symptoms, either of the gastric organs or of the respiratory tract. If the latter, there is sneezing, a cough with expectoration, and the physical signs of bronchial catarrh. The patient fancies he has caught a severe "cold," and, indeed, in many cases, it is impossible to say at the time that such is not merely the case. It is only the long continued nervous debility and lassitude, along with the fact that influenza is prevalent, which give rise to the suspicion that he suffers from the latter affection. The common complications are gastro-intestinal catarrh; bronchitis, pleurisy, congestion of the lungs, and pneumonia; cardiac irritability; inflammation of the external auditory meatus, or of the middle ear; and inflammations of the eye. Pneumonia is very common, and it is remarkable how often (as in alcoholism) it affects the upper lobe of the lung. The chest should be carefully examined, and often the consolidation, fine crepitations, and tubular breathing will be found at the apex. Sometimes, however, no physical signs can be detected, and then—if there be no obvious signs of other complications to account for the continued high temperature—a *deep* pneumonia should be suspected. Phthisis may follow an attack of influenza, in those predisposed to tubercular disease; and mental derangements or weakness sometimes follow an attack.

The prognosis is favourable in the robust, but the complications may produce chronic ill health even in them. In the weakly and aged, the sequelæ are sometimes very dangerous, and many deaths occur in this class after prolonged illness from gastric or other complications.

The treatment consists of controlling the fever by quinine or antipyrin preparations; the maintaining of the strength by stimulants and beef-tea, and later by a more generous diet; and also the treatment of the various complications as they arise. Pilocarpine may be found useful. Bromides, gelsemium, and even morphia are given for the severe headaches.

Epidemic Cerebro-spinal Meningitis.—Cerebro-spinal fever, or "spotted fever," occurs as an epidemic from time to time in America, Germany, and elsewhere, but it is not often met with in the British Islands. A micro-organism has been found which resembles that found in pneumonia. The disease is slightly contagious (*Dana*). It occurs chiefly in young men, and young recruits are specially mentioned as being liable. The pathological changes are those of an inflammation of the meninges, and sometimes also of inflammation of the brain and spinal cord.

The symptoms begin abruptly with chills, fever, violent headache, and vomiting, pain in the back, and great prostration. The muscles of the head, neck, and back, are held stiffly to prevent movement, and the surface of the body is painfully sensitive. There is great intolerance of light. The headache is extreme, and there is usually wild delirium and excitement, followed, later, by somnolence or stupor. The limbs are kept flexed. The face is pale, pinched, and frowning. The tongue becomes coated with fur, and the teeth covered with sordes. The pulse is never very frequent in the early stages, but it is often irregular and subject to changes—being at one time fast and at another slow, with variations in the tension. Towards the end of a case about to terminate fatally, the pulse becomes very rapid. In some epidemics *eruptions* on the face and body are present. These may be herpetic, petechial, or like the rash of measles or typhus. Hæmorrhages sometimes occur, and purpuric patches are frequent. A case generally reaches its height in three to six days when either the symptoms become gradually modified, or fatal coma supervenes. Many cases end in suppression of urine with uræmic symptoms. Some cases *abort* early; others quickly produce death by collapse.

In the cases which recover, there is a protracted convalescence of two to three months. Relapses are common. Many cases have only a partial recovery; and paralysis of the cranial nerves, hemiplegia, aphasia, deafness, and mental weakness, &c., are common sequelæ.

In the **diagnosis**, tubercular meningitis and typhoid fever should be noted.

The **treatment** of epidemic cerebro-spinal meningitis consists of the free administration of opium. The hypodermic injection of morphia is the best method. Iodide of potassium may be prescribed; and fly blisters to the spine, and galvanism, are used when the acute symptoms have disappeared.

Cholera (Asiatic or Epidemic Cholera).—The pathological changes are general in character, except for the presence of the characteristic "rice-water-like" material in the stomach and intestines. The mucous membrane of the gastro-intestinal tract is congested, and marked by extravasations of blood. The basement membrane of the bowel is bared, and the various glands in the mucous membrane are enlarged and prominent. The liver is

fatty; the spleen is smaller and firmer, unless secondary fever have occurred, when it is enlarged and congested; the kidneys are like the *large white kidney*, and the epithelium is granular and often seen cast off into the lumen of the tubules. The serous coverings (peritoneum, pleura, pericardium, &c.) are dry, and have lost their glistening appearance. The lungs are congested. The blood is dark in colour, thick, and feebly coagulable.

The cause of cholera is the development of a poison associated with a microbe. The latter has been described by Koch as a "comma-shaped" bacillus, and it is probably the most important factor in the causation. Cholera "vibrios" are described by others. The poison is conveyed to different countries by clothes and rags, by the air, and by ships, &c., and it then spreads in all directions. Malarial and low-lying regions appear to be more favourable to its development. Cholera is *not directly* contagious; but the stools and fomites contain the germ, and after a short time the poison is developed and is spread through the air; but undoubtedly the drinking water is the most usual vehicle by which the poison is conveyed to the system. *Heat*, and a moist, stagnant atmosphere favour the epidemic. A certain *susceptibility* appears to be necessary; and irregular habits, alcoholic excesses, bad air, fear of the disease, and depression, &c., predispose to attacks. The period of incubation is irregular—one day to a week, and even two, is stated; two to four days is the average.

The symptoms are divided into stages. *First, or prodromic stage.* The attack may begin with *diarrhœa* or *cholérine*. The former does not differ from the diarrhœa which results from cold or from errors in diet. There are some colic pains, and the first evacuations are copious, but coloured. In *cholérine*, there is vomiting and purging, and the patient soon passes into the cholera state. It may, however, be controlled, and, like diarrhœa, it may be regarded as an independent affection. Whichever way the attack begins, there is soon continued purging, and the stools soon become like rice-water, or "whey-like." The strength fails very rapidly and it is out of all proportion to the apparent loss. In a day, or two days, there are severe cramping pains in the limbs. The tongue and breath are cold, and the voice is husky and weak.

The *Second, or Algid Stage.*—The rice-water evacuations are increased in frequency, and vomiting begins, if not already present (cholérine). The patient is weak, giddy, and cold. The temperature falls rapidly (about 90° Fahr.). The pulse is rapid, weak, and small, and the heart-sounds become feeble. Cramps soon become felt, especially in the calves. There is thirst, and the tongue is white and pasty, and the breath cold. The face is pinched and blue, and the eyes sunken and staring, with dark circles around them. The skin appears wrinkled. The urine is diminished in quantity, and may be suppressed altogether. It is often albuminous. The depression is excessive, and death may result at this stage, after only two or three days' illness. If re-action take place, then the *third stage* begins. This simply consists of cessation of the purging, and

the gradual disappearance of the other symptoms. The temperature rises, the pulse regains its strength, and so on. It may, however, be incomplete, and the stomach may remain irritable for some time. Ultimately, there is recovery, but many cases relapse into a "typhoid" state—*cholera typhoid*. This consists of reactionary fever, combined with uræmia. The urine is albuminous, and there are headaches and stupor. The tongue becomes coated and the teeth covered with sordes. The patient has the "felled look" of a severe fever. There is "low muttering delirium," the abdomen is distended, diarrhœa continues, cramps and convulsions are common, and eruptions appear on the hands and spread to the body. Death may take place from coma; but sometimes there is recovery, after a long convalescence.

The average duration of a fatal case is two to three days; and *nine* days is the average duration of cases which recover. The "typhoid" stage may last two to nine days. The mortality is great, and the prognosis is always grave.

The treatment of cholera requires that the initial cholérine, or diarrhœa, should be checked by astringents. Opium and dilute sulphuric acid are the best for this purpose. Chlorodyne is useful, and morphia may be used hypodermically. The latter is also required for the severe cramping pains. The diet during this stage is important, and should consist chiefly of boiled milk, milk foods, chicken broth, soft boiled eggs, &c. If the symptoms be threatening all solid foods should be avoided.

Many authors maintain that the use of astringents, after cholera is fairly established, is useless, and some say even injurious. Probably a prescription of carbolic acid and bismuth (R 65) is the best to use for both the diarrhœa and the vomiting. Mustard may be applied to the epigastrium to check the latter symptom. Stimulants must only be used in very moderate quantity, and with caution. In the stage of collapse they appear very necessary. Warm baths are sometimes very beneficial. Ice to suck is very grateful. For the uræmic symptoms, give spirit of Mindererus and infusion of digitalis (both well diluted). When the collapse is very great, the injection into the veins of a warm saline solution sometimes produces wonderful results. At the stage of re-action the diet must be very cautiously strengthened, beef tea, chicken broth, gruel, or arrowroot being allowed in small quantities. The patient should, of course, be isolated, and all discharges should be thoroughly disinfected. The linen should be burned. During the prevalence of an epidemic, preventive measures are necessary. Great care should be taken to avoid such food (fruit, &c.) as is likely to set up diarrhœa. Regular hours should be inculcated, and all manner of excesses avoided. Ordinary hygienic precautions—including the use of disinfectants—should be actively carried out. Milk, and the drinking water should be *boiled*.

Diphtheria—Pathology.—At first, there is intense hyperæmia of the throat, followed in about twenty-four hours by the appearance

of grey-white points upon the tonsils, uvula, and around the pillars of the fauces. These usually coalesce to form a membrane, which consists mainly of fibrin, leucocytes and red corpuscles, cocci, and bacteria. In most cases the surface epithelium is shed; but membranes may appear in, over, and even under the intact epithelium. Later, this membranous patch becomes raised and is cast off. Should the patch be removed, a raw bleeding surface will be found beneath it; and a second membrane may quickly develop. In the blood there is marked leucocytosis. The disease may extend into the nasal passages, or down into the larynx; or it may begin in these regions—*nasal* and *laryngeal diphtheria* (membranous croup). In septic and gangrenous forms, the membrane becomes decomposed; and there is then a "mixed infection." The glands in the neck, and the submaxillary glands enlarge, and the cellular tissue in the neighbourhood is affected by secondary inflammation. Should the membrane extend into the bronchi, there is mechanical obstruction to the breathing, and emphysema, atelectasis, and œdema may be produced. If the lung be affected, there are extravasations and infarctions within its substance, and the bacilli are found there also. In the severe forms, the heart may become fatty; and ulcerative endocarditis is common. The kidneys are congested, and micrococci are found within and around the Malpighian tufts, and the epithelium is cloudy and granular. The brain is hyperæmic, and the peripheral nerves suffer parenchymatous degeneration, hence "diphtheritic paralysis." Swellings and extravasations often occur within the muscle tissues, which also degenerate when their nerve supply is cut off.

Diphtheria is a local specific and contagious disease, which may arise sporadically, and often occurs as an epidemic. It is due to the presence of the "Klebs-Löffler" *bacillus diphtheria*—the general systemic symptoms being the result of the development of *diphtheritic toxins*. A wet soil retaining dead organic matter, and exposed to cold wet winds, is favourable to diphtheria. Milk is one of the most frequent vehicles by which the disease is propagated. Household cats are frequently affected with diphtheria. An ordinary *simple* sore throat, and a so-called "drain throat," are conditions favourable to the reception of the true diphtheria. The young are more frequently affected—the most common period being between the second and seventh years. Bad hygienic conditions favour its development. Diphtheria often follows scarlet fever and measles, smallpox and typhus, &c. The incubation extends from three to ten or twelve days.

The symptoms begin, in the *simple form*, like an ordinary sore throat. There is chilliness and headache, with pains in the back and limbs. The throat feels hot and burning, and there is pain on swallowing. The fever may be mild or severe. There may be change in the quality of the voice, noisy breathings, coryza and bleeding at the nose, &c. The appearances of the throat are as described above; and within a day or two the patches of dirty-grey slough may be considerable in size. These patches become detached

about the third day, and the mucous membrane beneath appears red and swollen. The glands, &c., swell; the tongue is heavily coated with white fur; and the breath is fetid. The symptoms subside within a few days; but it is to be noted that *diphtheritic paralysis* may follow even the mild attacks.

In the *malignant form* of diphtheria the symptoms may begin like the simple, and about the fourth or fifth day, the membrane assumes the diphtheritic character, with high fever, and swelling of the glands to a greater extent than in the simple form. Sometimes, however, the onset of the malignant form is sudden and violent, with headache, severe pains in the back and limbs, vomiting, and high fever followed often by delirium. The membrane in this form is "yellow-grey," and is "thick, tenacious and leather-like." There is a copious purulent discharge from the fauces. The appetite is lost, the stomach is catarrhal, and the bowels may be confined, or otherwise. The urine is scanty and contains albumen. The symptoms may decline in about a week, in favourable cases; but while there is apparent improvement the membrane may be extending to the nasal passages or larynx, &c.

Subsequently, there is embarrassment of the breathing; the odour of the breath is very offensive; the glands enlarge in proportion to the irritation in the fauces; but without such glandular enlargement there may be profound toxæmia. The face becomes earthy and sallow looking, the pulse irregular and often slow, and there is great prostration. The *gangrenous* form is very severe and fatal. When the membrane extends to the nose there is stuffiness and sometimes epistaxis, and a nasal tone is imparted to the voice; when it extends to the larynx there is "croupy" cough, dyspnoea, &c. It may extend up the Eustachian tubes, and set up noises in the ears and deafness; or if the lachrymal duct be affected, there is blocking of the tears, &c. Such severe cases, with complications (if not quickly fatal) may extend to four or six weeks, before convalescence is established.

During the course of diphtheria, and generally about the second week, symptoms of paralysis may begin to be manifest. The palate suffers first, and there is difficulty in swallowing, regurgitation of the food into the posterior nares, and the voice acquires the nasal tone. About the fourth week these symptoms are marked, and deglutition may be very difficult or impossible. The palate hangs limp, and is anæsthetic. The heart is often feeble and very slow, and it may become suddenly paralysed (myocarditis). The respiratory nerves may also be affected.

Laryngeal diphtheria (formerly believed to be a separate disease, and described as *membranous croup*) is very common in childhood, between the second and seventh years. The false membrane is frequently adherent to the epiglottis and vocal cords, and lying loose within the trachea.

The symptoms commence with slight fever and hoarseness, the cough being shrill, dry, and "brassy." There is at first no dyspnoea, but during the course of the disease this may arise suddenly. There

is then much distress, the patient's muscles of forced inspiration come into play, the nostrils dilate, and all the symptoms of asphyxia are present. The inspiration is whistling and crowing, the voice is lost completely, and the cough is husky, while expectoration of fragments of membrane is attended with marked relief. The disease runs a remittent course, extending usually from two to six days, the child's breathing being noisy and difficult throughout, but with frequent exacerbations of suffocative distress. If the cough be loose, and the expectoration free, recovery may take place; but death may occur from suffocation, or from asthenia if the disease be severe and continued. The *prognosis* is, therefore, always grave.

In *nasal diphtheria* there is stuffing of the nose, and a purulent discharge which is often irritating. Sometimes there is swelling of the nose and face, with erysipelatous redness of the skin. The glands at the angle of the jaw may be swollen. Other *local* forms of diphtheria are otitis media, abraded skin, conjunctivæ, &c. Diphtheria of the larynx is sometimes *latent*.

The *post-diphtheritic* paralyses include the palate, the ocular muscles, the laryngeal muscles, and the muscles of the upper and lower limbs, and of the neck. Any group may be affected; and generally speaking, the paralysis occurs in relative frequency, in the order mentioned. The paralysis often varies in character from day to day. It may follow mild attacks. The muscles first lose their faradic, and later their galvanic irritability. Recovery is the rule, but sometimes there are fatal cases from asphyxia, pneumonia, or intercurrent affections. The paralysis may exist for several weeks only, but often it remains for several months.

The *prognosis* in diphtheria must always be guarded. The *toxic* cases are unfavourable; and extension of the membrane to the larynx is very dangerous, and usually fatal. A low temperature, with a slow, irregular pulse in septic cases, is very unfavourable. Sudden syncope during the course of diphtheria is very common.

In the *diagnosis*, the ordinary sore throats, and the syphilitic and scarlatinal throats must be noted. The dirty grey slough in diphtheria does not appear until after twenty-four hours; and in some cases there is no false membrane. Again, *all* sore throats accompanied by false membranes are not diphtheritic; but the bacteriological examination of a piece of membrane, and the discovery of the Klebs-Löffler bacillus, puts the matter beyond all doubt. The *laryngeal* form of diphtheria cannot be distinguished, *clinically*, from severe catarrhal laryngitis (catarrhal croup), unless false membranes be seen, or be coughed up.

In the *treatment* of diphtheria, attention should be directed to the local source of infection. The parts should be kept as clean as possible, and for this purpose chlorate of potash, Condy's fluid, solutions of borax, and other antiseptics are used, either as gargles or as local applications. *Chlorine mixture* is recommended; and carbolic acid, 20 per cent. in children, and 30 per cent. in adults. The nares may be syringed frequently with weak solutions of Condy's fluid. "Steaming" the nostrils and throat is soothing, and

freshly burned lime put into hot water and inhaled is often of great benefit. Spray douches are useful, and disinfectants may be used in this way. All medicinal treatment has given way to *antitoxin*. Five to eight minims of Klein's serum is injected once daily, or oftener. The diet should be generous, and alcohol should be allowed in fairly large doses, frequently repeated. The case should be thoroughly isolated, and great care should be taken to disinfect the discharges. The linen used by the patient should be burned, and the room should be thoroughly disinfected. For the paralytic affections iron and quinine, strychnine and phosphates, should be ordered. Galvanism of the muscles is useful. Tracheotomy may be necessary to relieve urgent dyspnoea; but as a remedy it has not been very satisfactory, as regards the reduction of the mortality. Intubation—keeping in view the great benefits of the "serum treatment"—may be of service.

CHAPTER XV.

GENERAL DATA, USEFUL FOR REFERENCE.

Contents.—Classification of skin diseases—Rules for the management of infants—Incubation periods, and the duration of infection; isolation and disinfection—Certifying the insane—Classification of the poisons according to the treatment—Signs of approaching death.

1. CLASSIFICATION OF THE SKIN DISEASES.

The author has not entered into the diseases of the integumentary system in this work, as he believes that a good skin atlas is preferable to short sketches of the skin affections, and more in keeping with the general objects of this handbook, as mentioned in the preface. The following classification, from Dr. Allan Jamieson's well-known *Diseases of the Skin*, is here appended, with his permission, as a guide.

CLASSIFICATION OF DISEASES OF THE SKIN.

CLASS	I. Morbi cutis parastitici. Parasitic Affections.
"	II. Morbi glandularum cutis. Glandular Affections.
"	III. Neuroses. Neurotic Affections.
"	IV. Hyperæmiæ. Hyperæmic Affections.
"	V. Exsudationes. Exudative or Inflammatory Affections.
"	VI. Hæmorrhagiæ. Hæmorrhagic Affections.
"	VII. Hypertrophiciæ. Hypertrophic Affections.
"	VIII. Atrophiciæ. Atrophic Affections.
"	IX. Neoplasmata. New Formations.