

phus may continue from thirteen to twenty days, and during its course, have a considerable variety of expression; but the symptoms, already enumerated, have appeared the most common and conspicuous in the examples of this nature, which have fallen within the sphere of my observation.

In lax irritable habits, particularly in feeble hysterical women, and in constitutions broken down by the long use of ardent spirits, the simple typhus is, now and then, accompanied with fits of wild and almost maniacal delirium. But nearly from the commencement of such cases, there are transient flushes of the face, followed by paleness; weakness and variability of the pulse; light tremors of the hands, such as attend habitual drunkenness; general softness, and dewy moisture of the skin, increased by the slightest exertions. Besides the heat is little augmented; there is an eager, wild, suspicious look; a peculiarly hurried, unconnected mode of speaking; and great apparent earnestness in the pursuit of a variety of imagined objects;—all or the greater part of which symptoms mark a very different state of the brain from that connected with the forementioned modifications of typhus.

The acute and sub-acute forms of inflammation, agreeably to my anatomical researches, produce in typhus nearly the same morbid appearances of the brain or meninges, the traces left by the former being merely somewhat deeper, and more extensive. The pia mater almost always exhibits marks of a previous increase of vascularity, with some coagulable lymph effused between it, and the arachnoid coat. Adhesions are often found in the convolutions and hemispheres of the brain; and the medullary part, on cutting, is covered with red points. The choroid plexus is generally turgid with blood, or the ventricles frequently contain a serous sort of fluid, especially in very young subjects; and pus is sometimes found in certain parts of the brain. The appearances, then, about the brain on dissection, are materially different in the inflammatory, and in the simple typhus; for genuine inflammation in the former leaves, as its traces, effusion of coagulable lymph, adhesions, suppuration, and occasionally even some approaches to gangrene itself; while in the simple typhus, only some partial injections in the capillary system are found, with perhaps an

exudation of thin serum, which had taken place in the last stage of relaxation. This is not a theoretical but a pathological distinction of great importance, since, however closely allied in many respects, the pure examples of the simple must not be confounded with the complicated examples of the inflammatory typhus; for though the simple typhus in the last stage may be attended with a permanent delirium, and that delirium with an injected state of the capillaries in the brain, yet both these states of the sensorium are combined with an universal relaxation, which demands a treatment very different from the delirium of actual inflammation, as shall afterwards be explained.

The medulla spinalis or its membranes are often inflamed at the same time as the brain or its meninges; but this connexion is not necessary, as I have known inflammation attack the former without affecting the latter, and the converse. Though inflammation of the spinal cord and its coverings is much more frequent in idiopathic fever than writers had formerly supposed, yet it is not an invariable attendant; for cases have fallen under my inspection where no sign of it existed during the progress of the disease, and where no vestige of it could be discovered by examination after death. When inflammation is seated in the upper portion of the spinal marrow or its membranes, there is pain in the neck, increased by pressing the fingers forcibly on the cervical vertebræ, and it is almost always accompanied with pains in the upper extremities resembling rheumatism, and generally with an uneasy, variable respiration; but when the under portion is inflamed alone, the pain is in the back, increased in like manner by pressure on the dorsal or lumbar vertebræ, and the lower extremities are affected with pains or cramps, while the urine is seldom regularly passed. So far however as my observation goes, patients most frequently complain of uneasiness throughout the whole course of the spine, when it is minutely examined by pressure; and then, pain following the spinal cord, the affection of the upper and lower extremities, the uneasy, variable state of the respiration without pain in the chest, and an uncomfortable feeling about the pit of the stomach and diaphragm, are among the principal pathognomonic signs. Yet



in inflammation of the spinal cord there is very often a remarkable soreness over all or the greater part of the body, so that if the skin be any where pressed, the patient complains as much as if inflammation existed under it; but on cross-questioning, they generally refer this soreness distinctly to the integuments, and, like the fore-mentioned pains in the extremities, it is also so much increased by motion as to make some persons cry out, and to excite a silent expression of suffering in the countenance of others. Nevertheless this soreness of the flesh sometimes exists in fever without inflammation of the medulla spinalis or its membranes; and then it is probably dependant upon the injected state of the capillary vessels accompanying the cutaneous nerves, by which their sensibility is augmented. Dr. Beddoes, in his admirable researches concerning fever, has collected some curious cases to prove, that the vascularity of the nerves is sometimes greatly increased, while he has shown, that this may be a cause of great irritation, if not occasionally of death itself. When we reflect, that a similar state of vascular injection has been found to exist in the origins of the nerves as they issue from the spinal cord, and that this state may extend to many parts of the nervous system, the remarks of Dr. Beddoes derive a more important claim to our notice with respect to the causes and concomitants of irritation.

Inflammation of the spinal cord may be acute or sub-acute, as in the brain, but the latter is much more common than the former; and it will therefore sometimes happen that the inflammation is only obscurely declared for some days, as in the following instance. My opinion was requested for a patient who had laboured under fever for several days, and whose strength seemed to be much exhausted. The respiration was short, and impeded, sometimes quick and at other times slow, and there was an occasional gasping as if for fresh air. The countenance was anxious, but not the least uneasiness existed in the head, even when repeatedly shaken: the tunica adnata was perfectly white, and no intolerance of light or sound existed. No pain was felt in the chest, and the most forcible pressure could be borne over all parts of the abdomen without shrinking, though an oppressive feeling of

weight and tightness was complained of at the pit of the stomach. There were now and then slight twichings about the muscles of the upper lip, occasionally violent pains in the upper and lower extremities, but without any uneasiness in the direction of the spine. The tongue was very foul and brownish, the lips somewhat of a leaden hue, the pulse about 130 in the minute, small, soft, but jerky, and the skin hot, and damp in some places. The patient lay on the back, rolling the head now and then on the pillow, and though motion of the extremities gave pain, yet the position of her legs and arms were frequently changed. Laxatives were prescribed with small doses of Dover's powder, but without any relief, and the next day, the patient complained of some uneasiness in the neck, which gradually extended down the greater part of the spine, while the pains of the upper and lower extremities became worse, and some tenderness supervened in the region of the liver. Blisters were repeatedly applied over the spine, and one over the region of the liver, the bowels were kept regularly soluble, and under this plan, together with an abstemious regimen, all the symptoms of the spinal affection disappeared. Other instances equally obscure in their origin have come under my care, in which pains in the upper and lower extremities, with an irregular respiration, were for some time the only indications of the inflammation within the vertebral canal; and as these pains might be confounded with rheumatism, it may not be superfluous to mention, that they are unaccompanied with any swelling about the joints, are generally combined with more or less feeling of numbness or tingling, and often suddenly shoot from one distant part to another. Hippocrates has observed that pain in the neck is an unfavourable sign in fever: when present, for the most part, it certainly indicates an inflammatory affection of the spinal cord; and the pain in the back, which is so common in typhus, is generally an indication of the same kind, when accompanied with pains in the lower extremities, and when increased by pressure on the lumbar vertebræ. Men whose sensorium is much exercised by important or anxious business are much more liable to inflam-



mation of the brain than labouring men of the lower orders, who comparatively pass a sort of animal existence, in which the mind is little exercised; and though I do not know whether the latter be more liable than the former to inflammation of the medulla spinalis, yet it is remarkable that in my practice this affection has occurred oftenest in females.

In typhus, the lungs, and their connections, especially in very cold or variable weather, are sometimes subject to the acute but more frequently to the sub-acute, inflammation; and as the breathing is sometimes anxious, even in the simplest cases of this fever, we ought to be the more attentive, that we may be enabled to unmask the most insidious attacks of pulmonic inflammation. When the pleura and lungs are affected with the acute species of inflammation, the local disorder is sufficiently obvious. With the ordinary symptoms of typhus, a permanent pain is then felt in some part of the chest, generally acute, though occasionally obtuse, but in either case it is much increased by deep inspiration. There is a sense of weight or constriction across the breast, the respiration is always laborious, the thorax heaves, as if under some oppressive load, and the *alæ nasi* are thrown into perceptible motion. The patient is extremely restless, and has a frequent troublesome cough, which augments both the pain in the side and the difficulty of respiration; most frequently he cannot breathe with any degree of ease when recumbent, but is obliged to have the trunk considerably elevated. The features altogether indicate surprise, alarm, or anxiety; the eyes seem prominent; the cheeks and lips are generally of a deeper colour than natural, yet in some cases the face has a pale, bloated appearance. The tongue is commonly foul in the middle, and of a dark red round the edges; the pulse is sometimes slow, full, and strong, but in other instances, quick, small, and weak. As in almost all local inflammations, the temperature of the skin varies considerably in the day, and partial perspirations are not uncommon, especially when the pain of the side is acute. Several cases of typhus have occurred in my practice, with as formidable a train of symptoms as those above specified: in some of them the difficul-

ty of breathing was at first apparently spasmodic, abating and increasing alternately, as happens in certain forms of asthma. When such an occurrence is noticed in this fever, it may be generally considered as the precursor or the concomitant of pulmonary inflammation. The practitioner, therefore, should be very cautious about the exhibition of any stimulant, such as æther, more particularly as the pulse in those examples is almost always low and oppressed. Persons subject to chronic affections of the bronchia attended with a copious expectoration are exceedingly apt, under the operation of typhous contagion, to be attacked with an acute inflammation lining the mucous membrane of those parts; and then the disorder of the chest assumes the character of peripneumonia notha, the face being pale, the lips somewhat livid, the pulse oppressed, the breathing laborious and rattling, from an accumulation of phlegm in the bronchial passages. This form of the disease is sometimes rapidly fatal, especially if it occurs in an enervated habit; and on dissection the lining of the bronchia is found highly injected, with much morbid mucus and a portion of pus in the bronchia themselves. The lungs, too, are congested in general with dark blood in some places, so that if a little be cut off, it will sink in water, which never happens in a perfectly natural state of the lungs (7).

When typhus is complicated with the acute form of pulmonary inflammation, it often terminates fatally within the first

(7) It was the combination of typhus with inflammation of the lungs which constituted the form of epidemic fever that prevailed to such dreadful extent in the United States in the years 1814, 1815, 1816. As is usual on the rise of a new Epidemic, the opinions entertained by our physicians with respect to its character and treatment were various and opposite. In the present instance this diversity of sentiment was chiefly owing to the greater or less predominance of the typhoid, or of the local inflammatory symptoms in individual cases. Upon this principle alone are we able to reconcile the contradictory statements which have been published concerning the nature of the disease and the success of different modes of treatment. For much valuable information on this interesting subject, the reader may consult the Report of the Massachusetts Medical Society, Gallup's Medical Sketches, Hosack's Medical Essays, &c.



nine days, and towards its close there is usually much disorder of the mental faculties. On examining the bodies of patients who died of this combination of disease, I have generally found some degree of congestion in the brain, and have seen large portions of the pleura literally coated with coagulable lymph, and considerable quantities of serum effused into the chest. In some instances the pleura alone was affected, and in others the inflammation had extended to the substance of the adjacent lung, in which there was either great congestion, a collection of pus near the surface, or an extravasation of lymph or of blood. Marks of increased action were occasionally observable on the mucous membrane of the trachea, and likewise, though rarely in comparison, on some part of the pericardium; and it may be remarked in passing, that though nosologists have pretended to distinguish inflammation of the pleura of the left side from inflammation of the pericardium, there are no signs which can be depended on as strictly diagnostic between them.

The thoracic inflammation, however, which is most frequently seen combined with typhus, assumes the sub-acute form, and apparently commences in the mucous membrane of the trachea, or in the pleura. It is to this modification of the disease that I am desirous of more particularly directing the attention; because, as it is less calculated to strike the senses with alarm than the first mentioned, it may more easily betray the medical attendant into a false prognosis, or into an erroneous practice.

The sub-acute form of inflammation most frequently begins in the trachea like an ordinary catarrh. Then there are mostly tension and pain across the forehead; heaviness, stiffness, and slight tenderness of the eyes; flushing over the cheeks, with a deepened redness of the lips, and general fulness of the face; sense of uneasiness in some part of the trachea; huskiness, or hoarseness in the voice; uneasy respiration; and more or less constriction, weight, or soreness in the thorax. In addition to these symptoms, a frequent cough exists, which at times excites retching or vomiting, and which is at first dry, but in two or three days is attended with an expectoration of

loose or viscid mucus, occasionally streaked with blood. For some days, these appearances undergo little change, and even may at last spontaneously disappear; yet most frequently the breathing daily becomes more oppressed, and the cough harder, especially at nights. Whenever the patient falls into a short sleep, the chest heaves with a more than ordinary effort, and the lips are not closed as is usual in that state; on the contrary, his mouth is considerably opened, and he breathes interruptedly, with an audible, thick, purring noise. He is generally awakened by a fit of coughing, when he usually spits up a little mucus, and continuing for some time in a state of irritation, chiefly complains of head-ach, uneasiness in the breast, thirst, and dryness of the mouth. As the pulmonary disorder advances, the pulse is accelerated; and there are now and then rather sudden attacks of shortness of breathing, probably proceeding from an accumulation of phlegm, or from some spasm of the bronchial passages, excited by the irritation of an inflamed surface. But, independently of such attacks, the respiration by degrees grows more laborious and noisy; and obscure pain, soreness, or distress of some kind is felt in the chest, particularly on change of posture, yawning, sneezing, deep inspiration, or coughing. The system becomes more irritable, the motion of the *alæ nasi* greater, the state of the skin and temperature more variable, the countenance more anxious, and the lips and tongue of a more leaden colour. The head, heavy and somewhat vertiginous from the first, is at length troubled with continued delirium; and after much suffering the patient expires, under coma, tremors, convulsions, or suffocation. The above is not an uncommon mode in which the sub-acute form of pulmonary inflammation proceeds, and it is usually protracted a little beyond the second week. But at other times it holds a different course; and when the mildness of its symptoms indicates neither immediate nor remote danger, an unexpected and often mortal, change takes place, from the inflammation having suddenly increased in the trachea or its branches, or from its having extended itself to the substance of the lungs. In three or four instances, I have seen the inflammation begin as a common cynanche



tonsillaris, and after having occasioned some ulceration in the throat, spread to the wind-pipe, and produce a most alarming combination of symptoms.

In examples of the above nature, I have generally found the lining of the trachea and especially of the bronchia very vascular after death, and a considerable quantity of mucus in the bronchia, sometimes mixed with purulent matter. Occasionally the pleura and lungs have also exhibited traces of inflammation, and there has often been some congestion apparent in the brain. In typhus, preternatural accumulations of blood occasionally take place, in the capillaries of the mucous membrane of the trachea, or of the bronchia, with little or no cough for a few days; and the increased fulness is at first only indicated by a slight purring noise in the breathing, or by a little mucus or lymph being hawked up in a slight effort, either with or without some streaks of blood. Such cases should always be particularly attended to from the beginning, because the symptoms are very apt to proceed insidiously; so that life is sometimes at last endangered by an accumulation of phlegm in the bronchial passages, from a slow but progressive inflammation.

When the sub-acute form of inflammation attacks the pleura chiefly, the breathing, if narrowly watched, may be observed to become quicker and more anxious, especially in the horizontal posture. Cough and uneasiness are almost always excited on a full inspiration; and there is, for the most part, pain or soreness in the right or left side, or under the sternum, with a feeling of weight or tightness in the breast. Most systematic writers assert, that pain is always clearly manifested when the pleura is inflamed; but I have attended some cases which proved the contrary, and the following one may be reported as a specimen. In a middle aged man, who had been infected from a mild typhus, under which his wife laboured, pectoral symptoms were developed with those of the contagious fever. During the whole of his illness, he made no complaint of pain in any part of the thorax, but simply of slight soreness, with an ill-defined uneasiness in the left side; and these were accompanied by short alternations of heat and

cold, and by a frequent hard cough, which was always worse at nights. Although his breathing continued rather oppressed, and the sensorial functions were occasionally deranged, yet he had no decidedly dangerous symptoms, until about the end of the second week, when the respiration became extremely laborious, and soon afterwards he died suddenly, from apparent suffocation. On examining the body, no lesion of consequence could be discovered, except the remains of an inflammation in the left pleura, and an imposthume in the left lung, the rupture of which had been the immediate cause of death; and doubtless both the inflammation and abscess had originated in the course of the fever, as the patient had been in perfect health before he was infected.

In cases similar to this, the progress of the inflammation is of course involved in considerable obscurity. But it may, nevertheless, be traced by the continuance of uneasiness in the chest; by the increase of the cough, dyspnoea, and restlessness; by the patient panting or breathing short whenever he speaks; by the number of respirations exceeding the natural amount in a given time; by the colour of the face and lips indicating some impediment to the common changes of the blood in the lungs; and by the gradually increasing frequency of the pulse, and force of the fever. When the inflammation ends in an abscess, the uneasiness in the breast abates; but the breathing becomes more laborious, and there are chilly and hot fits, with copious sweats, and great loss of strength. The most common termination, however, in instances of this kind, is by an effusion of serum into the bag of the pleura of the right or left cavity of the thorax; and although it often protracts life, as being the substitution of a less for a greater disease, yet patients generally sink under it at last. But in every case attended with difficult respiration, there is always a danger of serious effusion into the substance of the lungs, from the violence of their own increased action.

It now and then happens in typhus, that there are sudden irregularities in the circulation of the blood in the chest, which almost as quickly recede, and are followed by similar irregularities in the head, and both may at last disappear