

of fluid. The cavity of the abscess then again becomes distended, and the pain of compression returns. The pressure of the fluid operates on all sides equally, and tends to cause absorption in every direction. But this is counteracted by the constant tendency to the deposition of new bone. A process analogous to the pointing of an abscess in soft parts not unfrequently takes place; the ulceration affects one point of the walls of the abscess particularly, and an opening may thus be formed, through which its contents are evacuated externally.

In other cases, the process of deposition goes on in the whole circumference of the bone as rapidly as that of absorption, and the abscess cannot then make its way externally. The compact structure of the shaft of the bone also prevents it extending in that direction; the articular surface is then the only one towards which the abscess can extend. No fresh layers of bone can here be deposited, and the fluid consequently makes its way towards the joint.

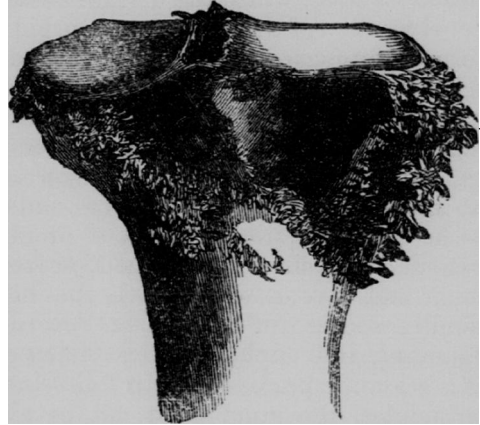


Fig. 4. Abscess in Tibia, opening into knee-joint.

The cartilage has been observed in such cases to be affected in two ways: either perforated, so as to allow the matter to escape directly into the articulation, or absorbed over a large surface without suppuration. In a case of the latter kind, recorded by Sir B. Brodie, the cartilage covering the head of the tibia in some places was perfect in its structure, but it existed only in narrow stripes; in other parts, it had degenerated into a substance something like condensed cellular membrane; in others, the only vestige of it was a kind of membrane, so thin, that the bone could be seen through it; and in other parts, the surface of the tibia was completely exposed, but not carious.

13, Dover Street, Piccadilly

SOME PRACTICAL OBSERVATIONS ON THE PATHOLOGY, MODIFICATIONS, AND TREATMENT OF CROUP.

(Read before the Harveian Society, November 6, 1851.)

By JAMES BIRD, A.M., M.D.

FEW infantile affections can more excite the fear of friends, or awaken the interest of the medical attendant, than the "croupy respiration" of children; nor are there many on the subject of which more contradictory pathological and therapeutical opinions are still entertained. In the estimation of some, this alarming and fatal disease is an inflammation of the larynx and trachea, terminating in the rapid formation of pseudo-membranous exudation, by which the air passages are blocked

up, and life extinguished; requiring therefore, if we would save our patients, the heroic and decisive practice of bleeding, blistering, and calomel. In the opinion of others, again, it is a spasmodic, nervous, and comparatively harmless complaint; aggravated, rather than relieved by such debilitating treatment, and requiring for its cure gentle emetics, moderate counter-irritation over the parts which form the seat of disease, aided by quinine, alkaline diuretics, and country air. Such extreme and exclusive views, founded rather on the result, or morbid appearance under which the disease sometimes manifests itself, than on a consideration of the causes and morbid processes of which the exudative form is the consequence, may be truly designated the *mon-oculism* of medical optics; whereby the therapist, without chart or compass for his guidance, and with a dim and glimmering knowledge of his course, is sure to wreck the vessel of his professional character. The human organism, on which we habitually exercise our curative skill, is subject to so many contingencies of internal and external influences, which ought to be all duly estimated in our properly exercising the profession of rational medicine, that we need scarcely wonder at the ready acceptance and favour with which the homœopathic aphorism, "*Similia similibus curantur*", has been received by some of the indolent, the ignorant, and unphilosophical members of what must be a laborious if a scientific profession. In following out its practical part from such principles, the mind must not be singly fixed on the *morphological* characters of diseases, but take into account their *pathogenic* origin, connected, as such may be, with an hereditary or acquired constitutional tendency, influenced by the dryness or humidity of the atmosphere, by season, climate, and locality. From a neglect of such considerations have proceeded much of the scanty information and erroneous views which have been entertained by many respecting croup, which differs in symptoms and morphological results according as the patients are of the plethoric or the anæmic constitution, the sanguine or the nervous temperament, with the consequent disintegrated condition of the blood brought about by humidity of climate or situation, and previous diseases of constitutional type. Hence, in dry healthy situations, and among children of the wealthier classes, we will generally have croup, with predominance of spasmodic symptoms, or *laryngitis stridula*; and among the poor, living in low, damp localities, croup will generally present itself associated with diphtheritic exudation, on the fauces or into the windpipe. Much of the discrepancy of opinion which prevails regarding this disease, between the French writers and those of this country, may be traced to a want of consideration of the differences of living, climate, and locality under which the characteristic modifications of croup originate in France and in England. In the former country, and even in America, the greater prevalence of the diphtheritic forms of the disease, proved by their higher rate of mortality, are evidently caused by the low, damp, and malarious nature of the localities, the marshy banks of lakes and rivers, where primary diphtheritic croup has been most commonly observed and described. In England, however, as well as in India, we meet with an idiopathic inflammation of the larynx and trachea, associated with well-developed spasmodic symptoms, simulating pure "*laryngismus stridulus*" yet not necessarily terminating by the

exudation of lymph into the air passages, when timely subdued by vigorous treatment, but of which heroic depletion by leeches need form no part. Such only promotes the disintegration of the blood, and the separation of its lymph by the mucous membranes; in the same manner probably as fibrinous depositions from the blood take place in cases of *endocarditis*. This, the spasmodic primary croup of some authors, the "*laryngitis stridula*" of others, occurs among children of rheumatic or scrofulous constitutions; and is accompanied by swelling and redness of the fauces, with copious deposit from the urine of white urate of ammonia. Primary croup, therefore, may be divided into *laryngitis stridula*, and *laryngitis membranacea*; these being, however, but stages of the same disease.

The first may be distinguished from *spasm of the glottis*, or *laryngismus stridulus*, by its spasmodic symptoms having been preceded by a catarrhal stage, by hoarse voice, a peculiar ringing cough, sibilant respiration, and crowing sound both during inspiration and expiration. In spasm of the glottis there is no catarrh, no swelling of the fauces, no cough, the voice unaltered, and inspiration only difficult. *Laryngitis membranacea* may be also *secondary*, following either measles or scarlatina; and is characterised by ash-coloured or whitish membranous exudation on the tonsils and palate, extending to the larynx and trachea, and adding thus a formidable complication to the original affection.

Primary croup generally sets in with febrile symptoms, and may be divided into three stages: first, the catarrhal, or febrile stage; second, the spasmodic stage; and third, the stage of exudation.

CATARRHAL STAGE. After sneezing, lachrymation, and cough of some days' duration, the child becomes cross and feverish towards evening, the skin hot, the thirst increased, and the pulse frequent, accompanied by hoarseness of voice, or a peculiar ringing cough. If we examine the throat, the tonsils and fauces will be found swollen, red, and vascular, covered by an increased secretion of viscid mucus; the tongue yellow, loaded, or white and furred, with symptoms of some degree of tenderness in the larynx on pressure. Sometimes these symptoms abate towards morning, and experience an exacerbation towards evening, thus presenting some of the features of infantile remittent fever.

SPASMODIC STAGE. The duration of the precursory stage is variable, sometimes lasting a day or two, and sometimes only a few hours. The transition from it to this stage is generally gradual, though it may be sudden and unexpected towards night, particularly when easterly or north-easterly winds are prevailing at the time. The child, who may have gone to sleep as usual, awakes suddenly in a state of alarm with well-marked dyspnoea, stridulous or crowing respiration, and hoarse ringing cough. The face is flushed, the breathing short and hurried, the skin hot and dry, the pulse full and frequent, and the cough suffocative and ringing. The inspiration is prolonged and stridulous, followed by short forcible expiratory efforts. The little patient is fretful and restless, tossing about in much agony, and frequently grasping the throat, as if to remove from there some source of obstruction. Sometimes the stethoscopic signs are of a negative character, but sometimes a sonorous or mucous r le, accompanied by a

feeling of vibration under the hand applied to the chest, exists in cases where bronchitis complicates the laryngeal affection. In these instances also, much epigastric tenderness usually marks a considerable degree of gastric irritation.

STAGE OF EXUDATION. The symptoms characterising the second stage, and which, with the fever, increase towards night, may for several days experience a morning remission, continuing the greater part of the day. No decided marks of amendment, however, take place; and while the intermissions become less distinct, the cough more difficult, the voice more suppressed, the respiration is sibilant, accompanied by livor of the lips and countenance, coldness of the extremities, and clammy sweats on the surface; thus marking the advance of the disease, and the period of lymphatic exudation from the mucous surfaces of the larynx or trachea. The agony of oppressed breathing increases, accompanied by a feeling of suffocation, and the child expires in a state of convulsion or of coma.

COMPLICATIONS AND MODIFICATIONS. In some families, an evident hereditary proneness to this complaint exists, so that all infantile members of them are, at successive periods of life, liable to some of the various forms or modifications of the disease under which it appears in infantile constitutions. Sometimes during teething, these children, who are generally of a lymphatic irritable temperament, have successive attacks of *laryngismus stridulus*, unaccompanied by any marked inflammatory affection of the larynx. At a more advanced period, the same children, when exposed to the morbid influence of external agents, such as cold and moisture, are attacked by more severe affections, or true *laryngitis*, accompanied by severe spasmodic symptoms. The occurrence, also, in advanced infantile life, of an acute inflammatory croup, among plethoric children of sanguine temperaments, may be seen in Scotland, as described by well-known and trustworthy authors; but such is, I think, rather exceptional than common. I have never seen elsewhere a case of this kind in the course of my own experience. The ordinary attacks observed both in India and in this country, have been those commencing with catarrhal affection, cough, fever of a remittent type, and predominant nervous symptoms, caused by inflammatory hyperæmia of the extremely sensible laryngeal mucous membrane, associated with irritability of the laryngeal muscles. The complications with which I have seen the affection associated, have been gastro-enteric affection, bronchitis, and diphtheritic exudation both on the tonsils and posterior part of the pharynx. In the gastric complications, the child seemed to have tenderness and pain at the nape of the neck and base of the skull, produced, no doubt, by the peripheral irritation from the stomach and intestines, communicated through the pneumogastric nerves to the base of the brain, and thence reflected on the larynx by its branches, the recurrent laryngeal nerves. With diphtheritic complications of the tonsils and pharynx, the same unhealthy exudative process may extend to the larynx, its mucous membrane being but a continuation of that of the mouth and pharynx. In my own practice, however, there has been no experience of this extension, timely attention having been given in all cases to subdue the pharyngeal affection by the application of tincture of iodine to the parts. Bronchitic complication is the one most frequently seen; and

as the symptoms of croup or bronchitis may predominate, giving the attack a corresponding and defined character, the medical attendant's attention must be directed to the peculiar characteristics of each, keeping steadily in view, throughout the treatment, whether these merge into well-marked croup, or degenerate into pure bronchitis. The following is an instance in which the gastro-enteritic and bronchitic symptoms greatly predominated over those of croup.

CASE I. J. A., aged thirteen months, of a lymphatic temperament, fat flabby make, and anæmic constitution, was attacked, on the 21st October 1827, by catarrhal symptoms, accompanied by cough, ill-defined fever, occasional vomiting of mucus, and nocturnal restlessness. His mother gave him some calomel with camphor, followed next morning by a purgative of castor-oil, and rubbed into his chest some strong liniment. The febrile symptoms had a nocturnal exacerbation, with a corresponding morning remission, so that the child appeared pretty well during the day, and his mother was not therefore alarmed. The voice became husky, and the cough hoarse and ringing on the 24th. I was called to see him, and ordered a large warming plaster to be applied over the chest and epigastrium, after the use of a warm bath; the calomel, with camphor, to be repeated at bed-time, followed by castor-oil in the morning, as before. On the night of the 28th, he had a severe attack of stridulous breathing, accompanied by hoarse ringing cough, much heat of skin, and other febrile symptoms. He was put into a warm bath, without deriving much benefit from it; but six leeches having been afterwards applied to the upper part of the chest, a considerable quantity of blood was abstracted, giving great relief to the respiration, which became free and easy. During the night, however, the bandages having given way, the little patient lost a large additional quantity of blood, by which his strength was greatly reduced. On the 30th, the respiration was more natural, but the cough very frequent and troublesome, the expectoration of stringy mucus, painful and difficult, and the pulse 160. A blister was applied over the chest and epigastrium, and having risen well, gave great relief. Some additional calomel was also given; and beef-tea, or arrowroot with a little wine, in addition to the nurse's milk, was ordered. On the night of the 31st, the gastric and bronchitic symptoms appeared subdued, but the patient was very faint and languid, and had a convulsive fit. The Indian station at which the parents resided being on an elevated table land, where the weather was hot and exhausting at the time, I got them to remove the infant to a more elevated and cooler site on the 31st October. The removal was at first attended by a favourable change of symptoms. Towards the evening of the 2nd November, however, he had an obscurely marked febrile exacerbation, followed by coma; and though the laryngeal and pectoral symptoms had been subdued, he died on the following morning, the 3rd November.

EXAMINATION AFTER DEATH. On examining the *head*, the pia mater was slightly congested, and the brain softened from the oedematous infiltration of serum into the cerebral texture.

Chest. The lungs were natural in texture, and collapsed almost freely, but the bronchi and air-cells were filled with a considerable quantity of thick frothy mucus. The larynx and trachea were ex-

amined, and found somewhat more vascular than natural, without any fibrinous exudation on the mucous surface.

Abdomen. The cellular substance covering the abdominal muscles contained much fat. The liver was of a bright red colour on a pale ground, interspersed with ash-coloured streaks. The stomach and small intestines, which were much contracted, contained nothing but thick mucus. The mesenteric glands were vascular and enlarged. The bile in the gall bladder was of a dark olive colour.

The untoward loss of blood in the above case, occasioned by the loosening of the bandages, seemed to have so reduced the patient's strength, as to increase constitutional irritability, and tendency to convulsion; so that, though the prominent symptoms of bronchitis were subdued, cerebral congestion followed the febrile exacerbation on the night of the 2nd, and ended by œdematous infiltration into the substance of the brain, causing death on the following morning.

The next case, brought forward in clinical illustration of the remarks made on the subject of croup, was one treated in this country: and though the gastric and bronchitic symptoms were equally, if not more, aggravated than in the preceding case, a less exhausting mode of treatment was found capable of subduing them, without reducing the solid constituents of the blood to such a degree as to cause fatal serous infiltration into an important organ.

CASE II. M. S., a stout healthy child of two years old, living in the neighbourhood of Regent's Park, who had been suffering some days previously from catarrhal symptoms, was attacked on the 1st February 1850, by hoarse ringing cough, stridulous respiration, epigastric tenderness and fever, accompanied by indications under the stethoscope, that the lungs were affected by bronchitis. The fauces were red and swollen, and the pulse quick and rapid. The child's eldest sister had been suffering from a troublesome cough, which, coming on in fits, had some of the characteristics of whooping-cough; and I therefore suspected that the present attack might be only the prelude of a better developed form of the same disease. After the use of a hot bath, which somewhat relieved the stridulous respiration, two drachm-doses of ipecacuan wine, sweetened with sugar and diluted with water, were given every twenty minutes, till free vomiting was produced. The operation of the medicine was attended by the discharge from the stomach of large quantities of stringy mucus, followed by marked relief to the respiration. A turpentine and pyroligneous acid liniment was applied anteriorly over the chest and epigastrium; and posteriorly from the nape of the neck downwards between the shoulders, till free counter-irritation and redness of the skin had been produced. The respiration became much more natural, though the cough continued troublesome. Mercury and chalk, with James's powder, having been given at bed-time, followed by castor-oil next morning, the bowels were freely moved; the stools being dark and bilious. Next day towards evening, there was a slight return of the stridulous breathing, when the turpentine liniment was again used to the chest, and the ipecacuan wine repeated to produce vomiting as before. From this date, decoction of senega, with spirit of nitrous ether, ipecacuan wine, and syrup of poppies, was given thrice daily in divided doses, and was followed by copious expectoration of stringy mucus from the throat.

On the 8th day, the child being greatly better, though troubled by cough, was sent for change of air to Brighton, where well-developed symptoms of whooping-cough appeared, but from which soon after it completely recovered. Luckily in this case, though the patient was stout and healthy, and bronchitis present, no leeching was deemed advisable—a suspicion existing, from the predominance of the spasmodic symptoms, that the attack was one of masked whooping-cough, as was afterwards proved by the result.

In the next case, there was no bronchitic complication; but the laryngeal inflammation being the return of a former attack, and being associated with ill-defined remittent fever, seemed, from the persistence of the symptoms, somewhat disposed to run into the stage of exudation.

CASE III. A. G., a stout leucophlegmatic child, two and a half years old, residing in the neighbourhood of Westbourne Terrace, and who had had croup in the previous year, was again attacked, on the 29th May 1851, by hoarse ringing cough and stridulous breathing, accompanied by swelling and vascular redness of the throat and fauces, and a puffy livid appearance of the countenance. For a short time previous to the present seizure, he had been labouring under catarrhal febrile symptoms. Prior to my seeing him, the nurse had put him into a hot bath, which produced a soft and perspirable state of the skin, and considerably subdued the stridulous respiration. The bowels had been freely opened by medicine the previous forenoon; and the urine, which was passed of a straw colour, threw down a copious white precipitate of urate of ammonia. On examining the gums, I found that two molar teeth were just penetrating. Six drachms of ipecacuan wine were given in divided doses, till free vomiting of mucous matter followed; and the turpentine and pyroligneous acid liniment was applied to the throat and sternum as in the previous case. During the night, the child had another fit of stridulous breathing, when the ipecacuan wine was repeated to vomiting, and with good effect. On the 30th, the bowels were copiously moved, and the respiration was easy, and nearly natural during the day. It became stridulous again towards evening, when the ipecacuan wine was given with relief. His cough was still hoarse and ringing on the 31st, when two dessert-spoonfuls of senega infusion, with nitrous ether, tincture of squills, and ipecacuan wine, were given three times daily. On the 1st of June, copious bilious yellow motions followed the administration of mercury and chalk with castor-oil. He was convalescent till the 19th June, when a fresh exposure to cold brought on a return of dyspnoea and croupal cough. The same system of treatment was repeated, with the effect of subduing the symptoms, excepting the obscurely marked ones of fever, which suffered an evening exacerbation and morning remission, accompanied by languor and drowsiness. For these, a mixture of nitrate and bicarbonate of potass in camphor julep, united with nitrous ether, was given three or four times daily, till the kidneys were freely acted on. The drowsiness and languor were subdued; but the patient looking pale and anæmic, small doses of sulphate of quinine, with sulphate of iron, were given, and a change to Tunbridge Wells recommended. He left London on the 26th June, and returned on the 25th July, much improved in health, having regained his ruddy look and firmness of flesh.

The next case is one of secondary croup, associated with scarlatina

anginosa, kindly sent, along with the morbid preparation of the larynx, by Mr. Britton, of Henry Street, Avenue Road, who performed the operation of tracheotomy.

CASE IV. Mary C., aged 3, was attacked with symptoms of scarlatina anginosa, on the 4th March, 1850; and on the 8th, symptoms of croup came on, which rapidly increased, in spite of emetics, leeches, and calomel. At the end of twenty hours from the commencement of the attack, the breathing became so much oppressed, as to threaten immediate suffocation; and in order to give the little sufferer a chance of life, tracheotomy was performed with the consent of the parents, followed by some mitigation of the symptoms. The little sufferer lived nineteen hours after the operation. The morbid preparation shows an exudation of thick false membrane into the larynx and part of the trachea.

PATHOLOGY. The mucous membrane of the larynx and trachea has, in the generality of cases, been found in a state of bright red hyperæmia; more particularly around the follicular orifices, which pour out, (like the dilated intestinal follicles in like states of dysenteric vascularity,) a thin fibrous membrane, which coagulates on the inflamed surface. This membrane, which, at advanced stages of the disease, has been found detached by a return of the natural mucous secretion of the part which separates it from the original mucous structure, and prepares it for excretion; as in those cases of dysenteric tubular membranes sometimes detached in diphtheritic dysentery, and which were long supposed to be portions of the original intestinal structure. In the more asthenic forms of the disease, prevailing in large cities and in low, damp, malarious localities, the mucous membrane, which has been found pale beneath the exuded diphtherite, presents ecchymosed patches at its follicular orifices, which are surrounded by an areola of hyperæmiated arborescent vessels, as in other similar states of diphtheritic exudation and disintegrated conditions of the blood associated with low vitality: an index of which may be found at this stage of the disease, in the large quantities of urate of ammonia excreted by the kidneys. Along with the deposition from the blood of its fibrinous elements, and the consequent secretion of them by the mucous crypts, there is a corresponding diminution of the red blood-discs, with accompanying increase of irritability and loss of power in the system. This membranous exudation, which is characteristic of the disease, is associated with febrile symptoms of a sthenic or asthenic character, according as it is of a primary or secondary origin; but in all cases, the particular type of the fever, and the plethoric or anæmic condition of the patient must be taken into account, before we presume to come to any opinion as to whether the exudation be of a high or low degree of vitality, and capable of vascular organisation. In general, it seems to be of the low kind, existing in conjunction with much irritability and spasmodic action of the muscles of the larynx and transverse membranous fibres of the trachea, by which the air passages are momentarily contracted or closed. Such muscular irritability is often much increased, in proportion as cerebral congestion is produced by sources of peripheral irritation, either in the respiratory or alimentary mucous surfaces; giving rise to complications of bronchitis, or to gastro-enteritic disease.

TREATMENT. The indications of cure in this alarming disease are, First, to allay the spasmodic irritability of the laryngeal muscles and fibres of the trachea, by which the air passages are contracted, and the respiration rendered stridulous; Second, to subdue the inflammatory hyperæmia of the mucous lining of the larynx and air passages, and thus prevent the secretion from its follicles of false membrane; and, Third, on the failure of these measures, to procure the discharge of the false membrane, and support the strength.

The *first indication* will be more immediately and best fulfilled by the use of a hot bath; whereby the cutaneous capillary action is greatly increased, and perspiration encouraged, with the effect of subduing the internal hyperæmia and accompanying irritation with which the respiratory and alimentary mucous surfaces are often simultaneously affected; which irritation is reflected on the larynx, through the pneumogastric and recurrent laryngeal nerves. This will be beneficially followed up by the free emetic operation of ipecacuan wine, which, while it actively promotes the excretory function of the skin and the bowels, mechanically relieves the vascular congestion existing in the mucous lining of the bronchiæ and throat. If the bowels be not freely moved by this medicine, mercurials, with James's powder and castor-oil, should be given, till their free purgative effect be obtained.

If the croup appear to be of the truly sthenic inflammatory character, leeching may be sometimes had recourse to in fulfilment of the *second indication*; but infantile constitutions being more irritable, and their vascular system more lax than those of adults, the cases which require bleeding are, I think, rather the exceptions; and in large towns more particularly, this measure should be had recourse to with the greatest precaution. In place of local bleeding, counter-irritation of the throat and chest may be produced by turpentine and pyroligneous acid liniments, mustard poultices, or blisters to the parts; though I decidedly give a preference to the former, as they can be often repeated, just as the state of the symptoms may require. If spasmodic symptoms greatly predominate, they may be also applied from the nape of the neck downwards, between the scapulæ; and in thus tending to relieve cerebral congestion, they particularly promote the fulfilment of the first indication. When there are signs of the local hyperæmia being followed by secretion of fibrous membrane from the disintegrated state of the blood, solutions of nitre and alkalies united with diuretics, will greatly promote the objects we have in view,—to eliminate from the system excrementitious matter, and thus restore the healthy capillary circulation and nutrition of the part affected, so as to obtain a return of its natural secretion. Infusion of senega, combined with nitrous ether, tincture of squills, and ipecacuan wine, seem also to act beneficially on this principle. The local application of tincture of iodine, or a strong solution of nitrate of silver, particularly where there is diphtheritic exudation on the fauces, will be found of the greatest utility in carrying out this indication.

The *third indication*, (founded on the termination of the disease in its third stage,) may be fulfilled by an occasional repetition of the emetics, the nitre, and the alkaline solutions, or senega infusion, with the addition of counter-irritation on the parts, aided by the administration of wine, proper nourishment, carbonate of ammonia,

and other stimulants to prevent collapse. If the exudative process has not at this period extended to the bronchi and pulmonary cells, the propriety of performing tracheotomy becomes a question; and as the operation has saved many lives, it seems not only justifiable but proper, though the success of it be problematical; but, having had no experience of this proceeding myself, I refrain from any opinion as to the circumstances in which it should be had recourse to.

27, Hyde Park Square, 6th November, 1851.

ON THE MANAGEMENT OF CERTAIN SECONDARY FORMS OF DIARRHŒA.

By HUMPHRY SANDWICH, M.D., Physician to the Hull Infirmary.

THE expectant method of the French, and the *nimia diligentia*, or "heroism", of the British school of medicine, is each a practical mistake. The happy blending of the two makes a secure pathway, on which we may firmly tread. But the safe treatment of diseases must equally be based on pathology, and recognise an enlightened observance of the laws and operations of nature. In the absence of these qualifications, men rashly interfere with the remedial efforts of nature, at the expense, perhaps, of both aggravating the malady and obscuring its cause; or, on the other hand, they leave the disease to pursue an unrestrained and fatal career. Avoiding both these errors, we should narrowly watch the order of phenomena, remove obstacles to recovery, and, that we may not thwart the conservative efforts of nature, interpose only when urgent circumstances warrant the interposition.

I propose to consider the treatment of diarrhœa under two general secondary forms—*first*, those in which the blood has been poisoned; and, *second*, those dependent on some local or constitutional source of irritation.

I. DIARRHŒA WHERE THE BLOOD HAS BEEN POISONED. "We can readily understand," says Mr. Henry Lee, "that the appearances and symptoms, which, a few years ago, were so often observed and described as forming a separate disease, under the name of gastro-enteritis, may frequently have been only the secondary results produced by an unhealthy condition of the blood."¹ The truth of this remark must strike every one conversant with the health of large classes of operatives in our principal towns, pent up at night in the crowded apartments of unventilated courts and alleys, and overworked from an early hour in factories, where "the sound of the steam-engine anticipates the cock-crowing of the morning". Amongst these pallid, sickly-looking people, whose nervous energy is below par, and whose blood is poisoned, the secretion of bile

¹ LONDON JOURNAL OF MEDICINE, No. xxxi, July 1851, p. 628.