

the primary symptoms are made the most conspicuous, and we shall then fully perceive the dangers of hesitation and delay, and fully estimate the powers of promptitude and decision in the beginning of urgent cases. But if much advantage results from the use of evacuants in the early stage of most febrile diseases, it is equally certain that great and irreparable mischief results from their abuse in the middle and last stages, especially in what are termed idiopathic fevers; and we must not therefore, evacuate alike in all forms and stages of fever, but on the contrary nicely vary the treatment according to the existing circumstances, that it may be active, moderate, or mild, just as the symptoms really indicate. In order still more deeply to impress these maxims upon the mind of the student and practitioner, I shall endeavour to recapitulate, and apply the doctrine of a congestive, a simple, and an inflammatory variety of fever to some of the most important purposes of practice; and as it must have been perceived, that my main object all along was to draw the attention to these purposes by presenting them in various points of view, so I will not hesitate to employ circumlocutions, that my meaning may be more fully comprehended.

RECAPITULATION

OF

SOME POINTS.

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OR

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FROM whatever causes febrile diseases may proceed, the doctrine of a congestive, a simple, and an inflammatory variety will go far to explain the internal pathology of all: for how much soever the external symptoms differ, still one or other of these varieties will be found to predominate, and its effects on the viscera will constitute the great objects of treatment; though of course no prudent practitioner will ever fail to take into account the minor bearings of the external symptoms, and all the leading peculiarities of the sick. It was noticed in the beginning of this work, that the causes of fever might be arranged into three classes, namely, specific contagions, marsh and similar effluvia, and such ordinary causes as cold, intemperance, and the like, which cannot be referred to either of the foregoing classes. Now the effects of these three classes of causes may be reduced to two kinds—common effects, and peculiar effects. The common effects are venous congestion, simple excitement, and that arterial disturbance called inflammation:—the peculiar effects though not solely confined to the outward signs are most conspicuous in them, the appearances of the skin, for example, respectively differing in typhus, measles, and scarlet fever. Some of the grand effects of the specific and ordinary causes shall first be traced, and those of marsh effluvium afterwards briefly noticed.

It almost invariably occurs in fevers proceeding from specific causes, and very often in those proceeding from ordinary causes, that they are ushered in by a general lassitude, variable as to degree and duration, in which the nervous sensibility

as well as the muscular tone is diminished, the animal heat reduced or rendered irregular, the pulse oppressed, and the functions of the stomach mostly impaired. When this primary stage is not succeeded by an increase of the heart's action and of the animal heat, but remains and interrupts the usual series of febrile phenomena, it constitutes what I have denominated the congestive variety of fever, which may be traced in the works of most authors who have written from extensive observation, though its pathology has generally been confounded with that of the other forms. The first operation of specific causes may be directly on the nervous system from some peculiar property, or it may be indirectly by inducing some change in the constitution of the blood; and in like manner the first operation of ordinary causes may be directly on the nervous system by a general shock, or it may be indirectly by abstracting caloric, which is one of the natural excitants of the body. In the operation, however, both of specific and of ordinary causes, the intercourse between the nervous and vascular systems is signally displayed, from the impressions communicated to the former, being concentrated on the moving power of the latter, for the heart's action is remarkably oppressed. The superficial veins contract, and the blood retiring from them into those which are deeper seated, is at last preternaturally accumulated about the right ventricle and the large internal veins, while proportionably less blood than common flows on the side of the arteries. Thus the natural balance between the venous and arterial apparatus is lost, the right ventricle being considered a part of the one, and the left ventricle a part of the other. Is this peculiar state, then, of the heart real debility, or is the strength of that organ merely suppressed, from the over accumulation of blood in the veins? Few questions in pathology are more important and difficult than this, if viewed in all its bearings. Though Sydenham has not designated the congestive variety of fever by any particular name, he was nevertheless fully aware of its existence, and considered it solely to depend upon an oppression by which nature was so much overcome as not to be able to raise regular symptoms. In illustration of this opinion he gives the case of a young man, who seem-

ed in a manner expiring, and whose skin felt so cool, that he failed to persuade the attendants that the youth had a fever, which could not, he continues, disengage and show itself clearly because the vessels were so full as to obstruct the motion of the blood. Sydenham declared, that upon bleeding him the fever would rise high enough. Accordingly he took away a large quantity of blood, and as violent a fever openly appeared as he ever encountered, which did not abate till bleeding had been three or four times used.* In the prior editions of this work, I was not aware of such a coincidence of opinion and practice with one whom I venerate beyond any past authority in physic. The sentiments indeed of Sydenham are similar to those which I formerly advanced, though doubtless he has expressed them in terms too general correctly to apply to all the various modifications and stages of congestive fever.

If we take the very extreme cases of venous congestion, those in which the *causa morbi* is at once so perfectly overwhelming as really to sink the constitutional powers for a time, we should be disposed to defer evacuations until the first shock was over; as we find is every day done by the best practical surgeons when the force of the heart is subdued, and the animal heat reduced every where below the natural standard, by the great shock of a fall from a height, or other accident. In all of such extreme examples, the immediate object is to restore the animal heat by external and internal warmth, and to keep the heart in play by the cautious exhibition of cordials. The first shock being once over if what is called reaction should follow, if the heart's action and the animal heat should be preternaturally exalted, then the indications for evacuating are distinct, because the disease has been converted into one of excitement. But if, on the contrary, when the first shock is over and the constitutional powers have in some degree rallied, but so ineffectually, that the heart is still oppressed and the animal heat still irregular, with palpable signs of venous congestion in some important organ, then bleeding may be beneficial, assisted by

* Swan's Translation of Sydenham, p. 570. the third edition.

those means which raise and equalize the animal heat; for in that case the oppression is continued by effects remaining after the subsidence of the first shock, in fact by over-accumulations of venous blood in the interior; which may prove mortal, if not opportunely removed, by preventing the development of that excitement, which constitutes the genuine febrile state.

The first shock, however, of specific and ordinary causes is seldom immediately threatening, but soon subsiding, it leaves those congestions by which the primary stage is prolonged, where the latent energies of nature are not sufficient to rouse the heart into increased action; and then indeed, as at a certain period of the former case, external and internal warmth, with blood-letting, is often necessary to create that reaction which nature unassisted had failed to establish; but where these means do not fully accomplish the purpose, calomel and opium will be found powerful auxiliaries, when administered in the mode before recommended. Now and then it will be necessary to bleed and to give diffusible stimuli at one and the same time, for this treatment is not inconsistent where the *vis insita* requires to be immediately supported under that loss of blood which is ultimately to free the heart or some other organ from oppression; but it should never be forgotten, that the stimuli are only designed to answer a temporary though important purpose, and that they should be withdrawn as soon as ever the heart's action is fairly renewed, since the danger then will be not from a deficiency, but from an excess of the true febrile condition. Whenever the animal heat is sunk much beneath the ordinary standard and the pulse continues weak and small, venesection cannot be safely used, until it be in some measure restored by the communication of caloric; and hence in some urgent examples of congestive fever, which arose from a sudden plunge into cold water, I have seen the hot bath first useful, and venesection afterwards necessary to save the patients from apoplexy or some other internal congestion of venous blood. In those instances of congestive fever where the first attack is not so strongly declared, but where the patient walks about for a few days, pale, shivery, and oppressed, an active purgative and the warm bath will

sometimes be enough to develop the excitement; but if these should fail a little blood taken by the lancet or by leeches will generally succeed, particularly when followed by an emetic and a few doses of calomel. But whenever blood-letting may be deemed requisite in the congestive variety of fever, the propriety of continuing or stopping the operation, must be determined by the effect which the loss of blood has upon the pulse. Where the pulse rises in fulness and firmness under the loss of blood, a perseverance in the operation is strongly indicated until the oppression be relieved, though it should not be carried to syncope, as in the excitive forms of fever; and on the contrary where the pulse sinks under the loss of blood it is as certain a criterion, that the operation should be immediately staid, for the object clearly is not to sink, but to free the action of the heart. In the last stage of the congestive variety of fever it is fully as necessary to abstain from evacuations of blood as in the last stage of the excitive forms, because the strength is then so exhausted, in the first, that the only chance for recovery is in the use of warmth, cordials, blisters, mild laxatives, and calomel with a little opium; and even what has been said about the propriety of blood-letting in the early stage must only be considered as applicable to those patients who have been healthy previously to the occurrence of the venous congestion, for there are some to whom this treatment is not suitable as shall now be shown.

Every man who dispassionately reviews the facts which come before him must be satisfied, that there are discrepancies in the condition of patients which demand considerable modifications to be made in the treatment; unless indeed this truth be kept constantly in view, general principles might lead to serious mistakes, for a difference even in the degree of the same application may make the difference between death and recovery in the result of some delicate cases. When congestive fever occurs in persons weak and emaciated from a prior disease, when for example it attacks them while just convalescent from typhus, the strength is not merely suppressed as in those who had been previously possessed of their full vigour, but it is really exhausted by the primary impulse of the disease; therefore warmth externally and internally applied, cordials

with very small doses of laudanum, and a moderate allowance of tepid wine and water are necessary in the first instance, with light nutriment afterwards, such as chicken broth or arrow root; and when the temperature of the body shall have been equalized, and the tone of the heart renewed, laxatives must be prescribed to ward off inflammation, which if it should however supervene must be treated as already directed in such enervated subjects. Some weekly patients, who had before been badly fed, clothed, and lodged, have been brought into the Fever Institution on the fifth, sixth, or seventh day of the attack of typhus, yet with signs of the milder congestive variety; and such have mostly soon been convalescent by the employment of external warmth, by thin tepid drinks of arrow root, and by the exhibition of a few doses of calomel, as the liver as well as the head was affected. Even while composing this page, two patients are in the wards in a convalescent state from this treatment, who were both brought in with cool skins, feeble, fluttering pulse, excessive giddiness, great prostration of the strength, load at the præcordia and other signs, pathognomonic of venous congestion, and both were so suddenly overpowered at the very commencement as to be unable to support themselves in the erect position. We are too little accustomed to consider the primary oppression dangerous in fever, because it is most frequently overcome by the efforts of nature, but even then the symptoms of the first stage constitute the elements out of which the subsequent excitement mildly or severely arises according to the degree of those symptoms; and where the excitement is not thus developed, but wholly or partially suppressed, this smothered sort of fever termed the congestive, is always highly hazardous. The reaction, therefore, which so very frequently follows the stage of oppression is immediately beneficial, whatever may be its final tendency, inasmuch as arterial excitement is far less dangerous than venous congestion; and one cannot but admire the economy of nature which has provided, that the last shall generally produce the first, by stimulating the heart to that exalted degree which gives rise to an open and regular fever.

In fevers of venous congestion, there is a deficiency of the

full and free action of the heart, and likewise a deficiency or an irregularity of the animal heat; but there is an excess of the action of the heart, and an excess of the animal heat in open fevers of excitement. Thus it will appear, that the motion of the heart is most intimately concerned in every variety of fever. If when its action is deficient, there be any local loss of tone in the veins, or any latent interruption, to pass over certain peculiarities of structure, the remora and accumulation of blood will take place in those vessels; as the over distension of the right ventricle must necessarily impede the free return of all the column of venous blood, and perhaps even some of the blood in the capillary arteries which anastomose with their correspondent ramuli of veins. On the contrary, where the action of the heart is increased, if there be any topical weakness or interruption in any part of the arterial system, the inflammation will be developed in that part, because the augmented force of the ventricle must increase the local embarrassment by sending more blood there than before.—The supervention of the hot stage is serviceable by removing the venous congestions of the first stage, but when those congestions have been considerable, they may leave predispositions which may be afterwards converted into inflammation; yet the hot stage is not necessarily attended by inflammation, as the modern followers of Erasistratus would have us to believe, but exists either without, or with inflammation. That condition of the circulation which exists in the hot stage without inflammation not having any name in our language, I have designated it by the term simple excitement. It is only in bodies, however, where we have the organs in a sound and equalized state as to the circulation, that we witness a fever of simple excitement, which may even of itself so disturb the capillary circulation in its progress as to occasion topical inflammation: for it is easy to conceive, that if any part of the capillary system should be once over-distended or otherwise interrupted in its circulation, the action of the heart alone, the mere continuance of the current propelled from the left ventricle might at length produce the disturbance called inflammation; as in any given number of small tubes supplied from a fountain constantly flowing, the water would conti-

tinue to accumulate in those points where an interruption to its course existed. The infinite number of anastomoses in the capillary system no doubt has been partly designed to compensate for certain degrees of interruption to the circulation of the blood in these wonderfully minute vessels, and indeed without such a provision by anastomoses it is difficult to perceive how the circulation could have been carried on with any degree of regularity, when local interruptions occur or when the heart's action is much disturbed.

It was formerly shown, that simple excitement consists in an increase of the heart's action, and of the animal heat, co-existing with some change in the secretions, and with an equable distribution of blood throughout the body. This form of fever is ofttest met in well organized children whose viscera are the soundest. It is likewise frequently seen in those secondary seizures termed relapses, and sometimes remains, as in typhus for example, when every sign of inflammation had been removed. Simple excitement, however, has often a tendency, on the principles already explained, to produce inflammation, to assume in fact a complicated character; so that it should always be moderated from the beginning by alvine evacuations and the strictly antiphlogistic regimen; and these means in a majority of mild cases will prevent the necessity of blood-letting, to which indeed they are frequently preferable, especially in delicate habits. When inflammation, however, occurs or is even threatened in the early or intermediate stages of this form of fever, general or local bleeding becomes a necessary auxiliary, according to the powers of the patient, and the importance of the organ implicated. But when a topical embarrassment, say of the brain or of the lungs, takes place in the last stage when the energy of the heart and whole system are giving way, the venesection must be avoided as a deadly mean; and in its stead, gentle laxatives, small doses of calomel, with a little opium now and then, light nutriment, and free ventilation are generally among the best measures at that critical period. Patients die of what is called idiopathic fever, where the excitement had remained simple till towards the close, and then some vital organ began to labour, from some interruption in

its capillary circulation. On examining the body, the vessels of this organ are accordingly found injected with blood, and, may be, there is an effusion of very thin serum. These are pronounced to be genuine evidences of inflammation, and yet the theoretical practitioner marvels that the patient should have sunk so fast under the loss of blood. But this state of the vessels, so common towards the close of idiopathic fevers commencing with a simple excitement, ought not to be considered as inflammatory, for if it be treated as such, the issue will be death. This state in truth is purely an injection dependent on the failure of the *vis à tergo*, on the diminution of the forcing power of the heart, together with that universal relaxation of which the vessels partake, and which is the main cause of the thin serous effusion. Now that the doctrines of debility have been broken up, and the minds of students are susceptible of novel impressions, it is necessary to warn them against that illogical generalization which makes fever inflammation, and nothing but inflammation; for how plausible soever this simplification may seem in the closet, at the middle but especially at the advanced stages of many idiopathic fevers, it will be found most perilous at the bedside, where nothing but truth can be available. Under the circumstances here alluded to, a very mild treatment is most frequently requisite and the very shock of those active measures which would be deemed necessary for the reduction of the supposed inflammation might soon be fatally declared. Nay, there are some cases of idiopathic fever, in which it is best to avoid bleeding even in the beginning, and to trust to purgatives, sub-acid drinks, tepid ablutions, a cool fresh atmosphere, absolute rest, and a light diet of vegetable slops; and such in fact were some of the epidemic cases of that low fever irritation which I witnessed among the poor of the metropolis within the last year, and such also, I have understood, on good authority, were some of these seen among the poor of Ireland, in which bleeding was not required, as indeed appears from published reports. In those people who have been previously long destitute of several of the necessaries, and of all the tranquilizing comforts of life, a very cautious procedure is demanded when they are attacked by fever: for in them a part of the