

ON THE NATURE OF  
INFLAMMATORY FEVER.

By HENRY SEARLE, *Surgeon, Kennington.*

THE term "inflammatory fever," when properly applied, refers only to that general excitement which is preceded and accompanied by local inflammation. The terms "symptomatic," and "sympathetic fevers," "pyrexia," and "constitutional irritation," are used, synonymously, to designate inflammatory fever.

Whether inflammatory fever ever occurs idiopathically, has been a question of some controversy. It is admitted by some to occur, though seldom, in so simple a form as in the synocha of Cullen; but its appearance in the more complicated form of synochus, from which it in a few days becomes modified into typhus, is very generally acknowledged. It is however by no means proved that fever takes place without the existence of local disease as its exciting cause. Broussais, Clutterbuck and others, are opposed to the doctrine of idiopathic fevers; while Dr. Southwood Smith's dogma is—"There are no fevers but idiopathic fevers."

Inflammatory fever may assume a mild or a severe form. The former is simple, consisting in a general excitement of the nervous and vascular systems: the latter is more complicated, being, in addition to the local phlegmasia, accompanied by more or less disturbance of the brain, liver, stomach, or other organs; so that the worst cases may more resemble typhus than simple pyrexia.

The different grades of inflammatory fever do not always correspond to the degree of inflammation, since it frequently happens that, in cases in which no predisposition to fever exists, even an acute inflammation is unattended by any constitutional irritation: and, on the contrary, in cases in which the predisposition is very great, the slightest inflammatory disease gives rise to considerable pyrexia. It may therefore be inferred that the predisposing causes play a greater part in the production of inflammatory fever, than the inflammation itself.

The *causes* of inflammatory fever admit of being arranged into *exciting*, *predisposing*, and *secondary or perpetuating causes*.

*Of exciting causes.*—Those inflammatory affections which are the most painful, are the most productive of fever; and the pain of inflammation depends upon the texture, mechanism, and office of the parts, together with the intensity and extent of the inflammation. Those textures, for example, which are dense, and cannot easily swell,—parts which on swelling become compressed by the unyielding structure of their contiguous and surrounding parts, and organs which

are subjected to sudden compression and distention—as serous membranes, ligaments, and synovial membranes of large joints, the fauces, and the bladder—when inflamed induce more or less pyrexia. Severe and painful injuries also, as compound fractures, burns, &c., frequently produce considerable fever.

The more intense and extensive the inflammation, the more acute the fever: when, however, the pain is so acute as to overwhelm the powers of the whole frame, instead of a high degree of fever, the consequences are, as in very acute gastritis, a low pulse, and cold perspiration.

The *predisposing causes* are always general, depending upon the nature of the constitution and the state of the health at the accession of the local disease, and especially upon the management of the muscular power during its progress.

It is doubtful whether inflammatory fever ever arises in the absence of a predisposing cause, it being essential to the occurrence of this fever, that the frame be in an excitable state, which state is inversely proportionate to the muscular power. It is true that a very severe and painful injury often produces, even in a strong constitution, a certain degree of febrile excitement in a few hours; but may not this be ascribed to the sudden, although not considerable, exhaustion of the muscular power occasioned by severe pain? This, however, is, at most, an extreme case, and does not affect the general rule—that the lower the grade of muscular power, the greater the excitability of the nervous, and vascular systems, and, consequently, the stronger the predisposition to inflammatory fever. Hunter observes that "in inflammation, when the constitution is strong, then it will commonly be the most manageable, for strength lessens irritability." And according to Abernethy, "irritation is debility excited." Numerous eminent physicians and surgeons, however, are of opinion that there is no absolute debility when the febrile action is characterized by a frequent and firm pulse. A frequent pulse, in the absence of inflammation, is an admitted sign of debility; and the annexed table will show that the frequent, although energetic, pulsation in fever, is indicative of excited action under reduced power.

That functional alliance exists between the nerves of sensation and those of motion, which, in the rising period of life, and in disease, places their respective powers in inverse relations. For example, very young infants possess the least degree of muscularity, and the greatest degree of sensibility of frame; and as the former increases, the latter diminishes, until the muscular system becomes fully developed, when they balance each other; this harmony is maintained so long as health is preserved, not only during the middle or stationary period of life, but

during that of decline, for, as the muscular power declines, the sensibility also becomes impaired. Again, women and persons of delicate frame, whose muscular system is not well developed, are highly sensitive; and whenever the muscular power is greatly reduced by venesection, spare diet, anxiety of mind or disease, the sensibility is proportionally increased. On the other hand, whenever sensation is accumulated by superexcitation, as by the influence of fear, excessive pain, &c., the muscular power is lowered. Instances may, however, be adduced, in which certain depressing agents, as intense cold, marsh miasma, opium, &c., diminish both the sensibility of the nervous, and the power of the muscular systems.

This law of inverse action obtains between the nerves of sensation and those of voluntary motion only. It does not involve those of involuntary motion, for the contractility of the heart and arteries always corresponds to the sensibility of the

nervous system, as the pulse faithfully indicates.

In accordance with these views, the following table is intended to exhibit a kind of analysis of inflammatory fever, by showing that, according to the condition of the muscular system, is the sensibility of the nervous; and that, according to the combined conditions of these two systems, the circulation becomes modified, so as to correspond respectively to them in the unexcited and the excited states of the body. Inflammation is made the chief exciting cause, in order to show by the pulse that inflammatory fever takes place inversely to the muscular power. Miscellaneous temporary exciting causes are also given, merely to afford an example of temporary general vascular irritation. At the lowest part of the table are exhibited exceptions to this law of inverse action between the nervous and muscular systems, showing that the nervous and the voluntary and the involuntary muscular systems are, under certain powerful agents, all depressed together.

CONDITION OF THE MUSCULAR SYSTEM.	SENSIBILITY OF NERVOUS SYSTEM.		EXAMPLES.	PULSE.
Least muscularity ...	Highest degree.	{ Unexcited .....	Infants in health....	{ Very frequent and small.
		{ Excited by inflammation	{ Infants with inflam- matory fever .. }	{ Rapid, small, and tense.
Little muscularity ...	High degree.	{ Unexcited .....	—	{ Frequent, small, and soft.
		{ Excited temporarily, as by spirituous potations, fright, unusual exertion, &c. .... }	{ Persons of delicate frame .....	{ More frequent, fuller, and less soft.
		{ Excited by inflammation	—	{ Very frequent, small, and tense.
Considerable muscularity.....	Moderate degree.	{ Unexcited .....	{ Robust persons in health .....	Natural.
		{ Excited by inflammation	{ Ditto, without pyrexia .....	{ Moderate, often slow, and oppressed.
Ditto, suddenly reduced in power by loss of blood &c.	Very high degree.	Excited by inflammation.	{ Ditto, with inflammatory fever.... }	{ Very frequent, full, hard, rebounding.
Do., reduced in power	High degree ...	Unexcited .....	Ditto, convalescent.	{ Frequent, full, and soft.
Every degree of muscularity subdued in power..	Low degree .....	{ Depressed by marsh miasma, intense cold, opium, &c. .... }	{ Every description of person in the first stage of idiopathic fever &c. }	{ Smaller, weaker, and sometimes slower, than natural.

The comparative view of the various conditions of the nervous and muscular systems, given in this table, greatly tends to illustrate the nature of inflammatory fever, and shows, at the same time, how much it hinges upon the deficiency in muscularity, or upon the sudden reduction of muscular power.

In infants, as is well known, a mere spark of internal inflammation will ignite the whole frame. In all persons except the aged, in whom sensibility has become much impaired, and even in those to a certain extent, the predisposition to pyrexia under exciting causes is proportioned to the deficiency in muscularity. Those, on the contrary, who are muscular and strong, will sometimes have a phlegmasia during several weeks, un-

accompanied by any constitutional excitement, so long as they observe their usual regimen, and are not subjected to such medical treatment as will deprive them of their muscular power.

There are other circumstances besides the sudden reduction of muscular power which will render a muscular frame exceedingly irritable, and therefore predisposed to inflammatory fever—viz. *mental anxiety*, and *the habit of inebriation*.

Few persons, comparatively, can long endure *mental anxiety*, and remain in a state of perfect health. Continued *mental anxiety* impairs the energy of the brain, and the tone of the muscular system, especially of the heart and bloodvessels; it renders the

whole frame morbidly sensitive. The mind becomes charged with apprehensions, and the feelings become readily irritated, the heart becomes subject to palpitations, and the bloodvessels sometimes allow hemorrhages to take place by transudation; the functions of the several organs of the body, particularly those of digestion, become deranged. In this predisposed condition of the frame, an attack of inflammation is very liable to occur, and which will certainly induce an acute form of pyrexia, which, if not soon subdued, will be accompanied by the wildest kind of delirium, grave functional lesions, and other signs of low typhoid fever.

The habit of *inebriation* produces a conditional kind of predisposition; for unless it be suddenly and greatly restricted, it does not generally create a predisposition to fever. The drunkard, when deprived of his accustomed stimulus, is deprived at the same time of his power, his muscular system becomes tremulous and feeble, and his whole frame irritable. If, then, he be subjected to privation during an attack of inflammation, he will, under this exciting cause, be highly susceptible of fever, which will be characterized by greater nervous than vascular disturbance, by delirium tremens, and generally by the absence of the hot skin of fever. The strictly antiphlogistic treatment almost invariably converts the disorder into a highly dangerous form of fever.

*Secondary Causes.*—During the existence of inflammatory fever, all considerable derangements of the visceral functions tend to perpetuate it, by giving support both to the predisposing and exciting causes. For example, an imperfect function of the brain and spinal marrow will prevent the due distribution of the nervous energy to the muscular system; an imperfect function of the lungs and of the other excretory organs, prevents that purification of the blood essential to the proper function of the nervous system; an imperfect function of the digestive organs deprives the body of its due nutrition so requisite to the maintenance of muscular tone. Derangements of the visceral functions not only become secondary causes of fever by reducing the muscular power, but frequently an additional source of excitement to the whole frame, especially to the inflamed part, thereby perpetuating both the local disease and the general vascular irritation. If an inquiry be made as to the origin of these functional derangements, it may be mostly traced to that system of treating inflammatory disorders, which suddenly reduces all the powers of the body. Sometimes a large blister, applied on a slender frame too near the seat of inflammation, aggravates both the local phlegmasia and its accompanying fever.

This view of inflammatory fever is not offered as entirely new, for it is universally admitted that a delicate and sensitive condition of body is favourable to pyrexia under the existence of inflammation; but notwithstanding the admission of this principle, it is most strangely lost sight of at the bed-side; and why? because the antiphlogistic is the fashionable system of treating inflammatory diseases, before which any principle, however sound, and although recognised, must fall prostrate, rather than be allowed to violate or interdict a system so sacred as the antiphlogistic. It is, however, hoped, that by invoking a more close attention to the real causes of inflammatory fever, that their relative importance will be more duly estimated; that it will be seen that although the exciting cause, inflammation, is a *sine qua non* in inflammatory fever, yet that the predisposing are, in most instances, the causes which have the greatest influence in the production of fever, and, therefore, that the treatment should be so adapted that, while attempting to remove the exciting cause, it should not, at the same time, be calculated either to increase or to produce the predisposing causes of inflammatory fever.

## INTESTINAL OBSTRUCTION

FROM

RAW WHEAT.

*To the Editor of THE LANCET.*

SIR,—Permit me to transmit to you the report of a case, wherein a fatal result was near occurring, from a habit on the part of the patient of eating raw wheat. I am, Sir, your obedient servant,

J. L. M'CARTHY, M.D.

Macroom, October 14, 1835.

On Thursday, the 8th instant, I was sent for to visit John Leary, ætat. 35, living at Toames, three miles from hence, a steward in charge of a farm belonging to a gentleman of the name of Penrose. I found the man in bed, labouring under the most agonizing pains, which he referred to the anus, rectum, and loins. He was bathed in sweat; his countenance expressed the greatest anxiety, but he suffered no headache nor delirium. His tongue was coated with a thick white fur, but moist; there was no affection of the chest or of the respiratory faculties, nor any complaint of the stomach, but he had much thirst, urgent desire to urinate, and evacuate the rectum, without ability to effect either. The abdomen felt quite soft on pressure, except over the pu-