as in those fevers ushered in by a cold stage, inflammation is not a primary, but a secondary event, of course it follows that it does not stand in the relation of a cause, but of an effect to the fever.

Local irritation induces fever by increasing the heart's action, through the intercourse which exists between that organ and the nervous system. Thus I have known a blow on some external part first create local irritation, and then excite the heart, and this excitement produce, on the principle above explained, inflammation of some internal organ ; and thus also I have known internal inflammation to follow the local irritation produced by a surgical operation, a consequence by no means uncommon. Local affections, however, are not always followed by fever in this manner, the fever being partly the result of a general shock accompanied with venous congestion ; and that fever in its turn, so far from being symptomatic of inflammation, as is currently supposed, actually produces the inflammation in the part where the injury had been inflicted. For example, if a man on being thrown forcibly from a horse, were to crush his arm, immediately after the accident a general shock of the system would be observable as well as the local injury ; and at that time no surgeon could denominate the state of the arm inflammation, neither could he have any pretence for saying that fever existed, since the whole surface would be preternaturally cool, and the heart's action oppressed. In fact inflammation would only supervene in the arm *after* the heart's action and the animal heat had been increased, or to speak technically *after* the re-action had taken place ; the inflammation occurring in the injured part as an effect of the fever, because the circulation in that part had been previously disturbed by the bruise or laceration which it had suffered ; in fine, just as a visceral inflammation arises out of fever, from some prior disturbance which we term predisposition, though that disturbance is to a far less amount, than in the external instance adduced for the sake of illustration. When what is called inflammation arises without a preceding excitement, it is generally produced by some irritation, as when a blister is applied to the skin ; and this strictly primary species of inflammation, according to its degree, may or may not be accompanied with constitutional disorder, with that increase of the general heat and of the heart's action so frequently mentioned. The inflammation, therefore, may be a simple disturbance in a part as unconnected with fever, or it may be a complicated disturbance in a part as connected with fever ; but whether in both cases the local affection be exactly the same yet remains problematical, as it has been considered precisely the same, rather from analogy than from minute observation. It would indeed be important to be informed what state of the vessels it is which constitutes inflammation. From cautiously marking the phenomena of an external inflammation it appears to me, that three things occur in the vessels implicated directly and indirectly. In the first place, red blood circulates in capillaries which in a healthy condition only conveyed a colourless fluid ; in the second, those capillaries which did circulate red blood before, are now preternaturally distended with that red blood ; and in the last, the volume of the arteries leading to the part is increased. Why red blood should circulate in capillaries which before conveyed a colourless fluid, why the capillaries which circulate red blood in health should now be preternaturally distended, and why the volume of the arteries leading to the part should be increased, are questions not easily to be answered, even allowing that these conditions really do exist in inflammation. According to my observations, no inflammation occurs without an increase of heat in the part, and this, with redness, is one of the phenomena noticed as the most constant by authors. Now an increase of heat must necessarily expand the fluids contained in the vessels, and this expansion must of course augment the capacity of those vessels, so that they may actually contain more blood than in a natural condition ; and the increase of volume in the arteries leading to the affected part may be in some measure explicable on the same principle, though the blood probably accumulates in them from not being freely returned by the veins from that part. The action of one artery I have never known greater than that of another, and what we call increas-

ed action is, I suspect, merely increased accumulation, and what we call increased determination is, I also suspect, merely an increased volume of the vessels arising from an impediment to the return of the blood from the quarter to which those vessels lead. Increased secretion, so common an attendant upon inflammation, is no proof of an increased action, is no proof that the arteries of one part re-act more frequently than the arteries of another part. If the capacity were increased, the augmentation of the secretion might be the result of that increase of capacity; as in two tubes of different dimensions most fluid would pass through the larger, if the forcing power connected with both were the same, and in the human body, the heart is that forcing power. One of the ancients made action every thing in oratory, and many of the moderns would seem to make it every thing in pathology, for action, a change of action in the vessels solves every difficulty, by being made as various as the occasion may require. In truth the action of arteries is exceedingly limited, consisting of a correspondence to the action of the heart while they maintain their irritability, and that irritability consisting in a power of accommodating themselves to their contents; but in the numerous changes which inflammation induces in the same and different tissues, no doubt can exist, that the vital functions referrible to the nerves, and the chemical functions referrible to the fluids, co-operate with the functions of the heart and the vessels, which are chiefly mechanical.

The third and last mode in which fever may be induced, is by the direct application of a stimulus not sufficient at once to inflame any particular part, but to excite the heart into increased action, and the heat of the body beyond the common standard; and hence fever may arise, without the intervention of a cold stage, from exposure to an elevated temperature, from the use of ardent spirits, wine, or the like, from strong mental emotions, from rich food, and from excessive exercise. Scarcely a summer has passed over without my having witnessed attacks of this nature from the direct or indirect influence of the sun, and I have seen several at every season of the year from intemperance in drinks and diets; but whatever may be the stimulus applied, the local affections,

which are so apt to supervene, may generally be traced to the increased action of the heart operating on local predispositions as already explained, and these predispositions chiefly vary according to climate, habits, and hereditary structure. Concerning the influences of each of these circumstances on the different tissues we have not a sufficiency of data for generalizing the subject of predispositions; yet many interesting particulars are scattered in various places, which if concentrated might reflect much light on this apparently obscure department of pathology. In a most interesting work,* replete with practical information, Mr. Dickinson has clearly shown, that one form of the yellow fever, which he calls the Inflammatory Endemic, is commonly produced by the direct impression of solar radiation; and however yellowness of the skin may accompany fevers arising in hot countries from marsh effluvium, there can be no question but it is an incidental symptom in them, as well as in the Inflammatory Endemic of Mr. Dickinson, which is manifestly a modification of the common continued fever of this country. As inflammations, whether of the internal or external parts, are so liable to be complicated with fever, in whatever mode it be induced, perhaps a few further remarks respecting their treatment may not be thought superfluous by those who can bear the tedium of some repetition, when its object is more effectually to illustrate the leading points of practice by the exhibition of various facts:—yet in the mean time I trust it has been made clear, that these inflammations, as they usually occur, are not the causes, but the consequences of fever, and that the phlegmasiæ ought not to be classed simply as local affections, but as most frequently the products of the constitutional derangement termed the common continued fever, modified indeed in their characters by the various tissues where they chance to be seated.

* Observations on the Inflammatory Endemic incidental to strangers in the West Indies from temperate climates, commonly called the Yellow Fever. By Nodes Dickinson, of the College of Surgeons, Staff Surgeon to His Majesty's Forces, &c.