

process. Now it will be admitted that, according to the view above taken as to the nature of the calorific process, the profuse acid sweats and extremely acid urine which are among the prominent phenomena of rheumatic fever are but a certain index of a *break* in this vitally chemical process—other attending phenomena of course telling the same tale. And in no individual is the break so likely to occur as in that young man who exposes himself whilst in a state of perspiration, and with an active circulation, to such a potential agency as a *cold* wind for instance, which thus results in a sudden chill. I do not mean to say that this latter is anything more than the exciting cause; of course there must be likewise the predisposing cause, which I hold to be prominently partial failure, or deficiency in that part of the vital energy which presides over the process of calorification. This latter circumstance by a coincidence of events,—the exposure, the driving back of the perspiration which, as we said, contains lactic acid, the vital action of the cold on the capillary zone,—eventuates in throwing on the system as a bye product, what formed an important factor in such an important process as the production of animal heat. I need not say that this deviation may be the work of a very few minutes, or in bad cases, may extend over a much greater period of time. This circumstance will thus, in a great measure, determine the degree of severity of a case of rheumatism.

It matters not how long this deviation lasts,—the result is the same pathologically: a certain amount of *foreign matter* (for so it is after severance of this vitally chemical connection) is thrown upon the system and thereby into the circulation, for decomposition or elimination, or both. This foreign matter produces a specific inflammation in the tissues—especially the *fibro-serous* variety. But now an important question might be asked: Why are the fibrous structures of joints and serous membranes so prone to be affected by the rheumatic virus?

To this I cannot give a perfectly satisfactory reply, as I can get no light from the authors I have perused on this subject. It seems quite possible, and perhaps probable, that the following explanation is the *true* one:—Kolliker states that “serous membranes possess *no glands*, and upon the whole but few vessels and nerves.” This being so, it seems quite possible that these membranes are especially amenable to the action of the poison which, being poured into structures possessing but few absorbents, remains in a great measure as a specific irritant, causing inflammation with its attendant results—chief of which is the *pain*.

It must be remembered that in very severe cases other structures than the fibro-serous are painful. I have seen many patients in the hospital suffering from this disease evince the greatest anxiety the moment the bed was approached. And if perchance a student should unintentionally let the weight of his hand rest on the leg, or even the bedclothes, he would soon be admonished that he was an unwelcome visitor, by the cries, &c., of the unfortunate, and this is especially so where there is little or no diaphoresis. But the profuse acid sweats which are a very usual attendant on this form of inflammation soon tell the tale, that the aid of the general lymphatic absorbents has been called into requisition and are acting their part well. In severe cases, however, where the deviation, or rather *arrest*, is long continued, I need not say the whole system is taxed with the burden of ridding itself of this now foreign associate, the circulation becomes overloaded with it, and is now rather the instrument of irritation than of nutrition. Hence are manifested the following symptoms:—High fever, the temperature ranging from 100 to 104; in bad cases the temperature has been known to be as high as 110 or even higher, and in some cases, as in cholera, to rise after death; restlessness and uneasiness, but inability to move on account of the pain; copious perspirations, the patient being bathed in sweat which has a characteristic *sour* or acrid smell, like sour bread, and usually of a very acid reaction. Sudamina now appear and may be abundant, coming out in crops. The pulse is full and strong: the tongue thickly coated, with much thirst, anorexia and constipation. The urine is remarkably febrile, deposits urates abundantly, and sometimes contains a little albumen.

Generally there is sleeplessness as a result of the pain, but immunity from head symptoms as a *rule* is rather to be remarked in cases of rheumatic fever. Occasionally, however, slight delirium exists. As I said before, *pain* is generally complained of; to this must be added stiffness. But the joints are specially the affected structures. Sometimes these pains may begin like cramps, say in the right hand extending *gradually* to the shoulder. Next may follow the right knee, becoming painful, tender and swollen. The medium-sized joints are the ones usually affected—elbows, knees, wrists and ankles; but pressure on one trochanter might possibly reveal that the hip-joint is not exempt.

The pains may be erratic in character—flying from one joint to another, or may involve several joints together. From these symptoms and many more that might be mentioned, it is clear what severe con-