

it increased labor of the heart, which, we have seen is already enfeebled by the fever, by increasing labor, and by increased resistance in the consolidated lung-tissue.

That during a cold bath, therefore, a fatal collapse may ensue in pneumonia is a clinical fact of great practical importance—one that is to a certain extent exceptional; and hence the prominence I have given to the subject in this connection. Under no circumstances should cold baths be resorted to in pneumonia, in cases of aged people, very fat people, debilitated people, and finally those suffering from heart-disease. And, if none of these considerations forbid its use, the heart-action should always be supported by stimulants at the time of the bath. Of these I will mention alcohol as most rapid in its action; quinine, as the most permanent. If there is any doubt as to the failure of heart-action, quinine is the remedy above all others, for the reason that while it diminishes temperature, it tones and strengthens at the same time the failing muscles of the heart. As a general febrifuge and cardiac stimulant, digitalis should also be mentioned in this connection as a valuable addition to the quinine. But, with a purely antipyretic method, Liebermeister claims to have brought down the mortality in "croupous" pneumonia from 24.4 per cent. to 8.8 per cent. But the value of this exclusive treatment certainly requires to be confirmed by further experiment before it can be generally received. Moreover, our pneumonias in this country vary so greatly in their type, and in different localities, that all exclusive modes of treatment are out of the question. Indeed, quinine and stimulants are, in many cases, indicated from the first.

I have dwelt mainly upon the uses of the cold bath in the more inflammatory types of pneumonia, because it brings up the question of *excessive blood-heat* upon the body, and especially—for reasons suggested—upon the *heart and respiratory muscles*.

It cannot escape the attention of the general professional reader, that growing attention is given to the danger resulting from simple *increase of bodily temperature*. Without discussing the question as to the cause of the fever, we are beginning to discuss its effects upon the organism as a dangerous element of disease *per se*. Trousseau says: "Few persons recover from enteric fever if the temperature exceeds 105°." This may be too dogmatical in its statement, but it is an approximation to the truth. Fever is a dangerous element of itself, and it is beginning to be more and more recognized as such. In typhus, typhoid, and other infectious diseases, "the greatest danger," says Niemeyer, "is from the severity of the fever." This danger he regards as a double one. On the one hand, the increase of the bodily warmth above a certain point—say 108°—"induces paralysis of the heart and renders life impossible;" while, on

the other hand, "continued increase of the production of heat, or increased tissue metamorphosis, induces consumption of the body of the patient." The exhaustive effect of the fever is compared to that of excessive bodily fatigue.

In the treatment of these fevers, Niemeyer urgently advises the *abstraction of heat*, and speaks of cold affusion, or the cold bath, as one of our most valuable antipyretic agents. This will be recognized, however, as an old remedy in fevers. It was a favorite with Galen, and still more so with Currie; and, at a later period, with our own countryman, Nathan Smith. At the present time Niemeyer and others urge only what Currie so enthusiastically wrote about during the latter part of the last century. His *Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Febrile Disease*, are among the most eloquent contributions to the professional literature of his time, and his recommendations have been followed with much success. Armstrong, who wrote so well on fevers at a later period, speaks no less enthusiastically of the febrifuge virtues of water. He adopted, substantially, Currie's mode of using it.

Niemeyer has somewhat modified his mode of using cold water. Formerly when the bodily temperature had risen to a dangerous height, and there was occasion to lower it, he had his patients "wrapped in cold wet sheets, and the proceeding repeated at intervals of ten or twenty minutes until the desired end was attained." But, observing that there was occasional exhaustion along with the retardation of the pulse, he more recently doubted the propriety of such sudden and persevering abstraction of heat. He raises the question, very properly I think, as to whether it is not possible to exhaust the patient by an "excessive increase of the production of heat," comparing it, as already stated, to the effect of excessive bodily exercise. He now resorts to less sudden and less energetic abstraction of heat than formerly. His plan is substantially that recommended by Ziemssen: "As often as the temperature rises above 104° the patient is placed in a bath whose temperature is about 10° below that of his body, or about 95°." The temperature is gradually reduced to 68°, the patient remaining in till he is slightly chilled. He is then placed quickly in a warm bed. This is repeated at first four or five times a day; subsequently it is reduced to two or three. If quinine is used in two or three grain doses at the same time with the abstraction of heat, he thinks we are not obliged to use the baths so often.

In the inflammatory stage of our autumnal or remittent fevers, in which there is marked elevation of temperature, with dry, hot skin, cold affusion frequently proves to be a valuable sudorific. My experience with it in this class of fevers in the West and South-west has been extensive, and I can speak, therefore, with confidence as to the value of