

perform the additional labour made necessary by the disease.

"This duty involves two subdivisions.

1. Prophylaxis against exhaustion of the heart.

2. Control of already existing exhaustion. This is shown by the fact already repeatedly urged, that notwithstanding the continuance of the local derangement, the force of the disease is usually broken when the fever abates.

Is it proper to bathe a patient who is ill with pneumonia, to abstract heat directly? It may be fairly urged that from the moment when the peripheral vessels contract under the influence of cold, the bath produces an increased resistance in the vessels, and consequently an increase of work for the heart. It becomes a question, therefore, whether the overloaded heart may not in this way become completely paralyzed. The author assures us that neither he nor his pupils have ever met with such a result, although he has used the bath both frequently and systematically, and at a very low temperature. He does not deny that fatal collapse may occur during the bath, or that the bath may be a direct cause of death; but he insists that the collapse may be avoided by a very simple precaution—the administration of stimulants. The common objection to the use of the bath, namely, the danger of contracting a cold, is shown to be imaginary; indeed the author under unavoidable circumstances has allowed his patients to bathe while exposed to a draft of cold air, without their receiving any injury. Nor has he noticed that such sequelæ as chronic pneumonia, phthisis, &c., were apt to occur from this cause. Hence, in case the abstraction of heat were necessary, and no water were to be had, he would not hesitate to expose his patient to cold air until the necessary amount of cooling was obtained.

"The amount of heat to be withdrawn depends upon the amount of fever. A bath at the temperature of well-water should be administered as often as the temperature in the rectum reaches 104°F. The duration of the bath should depend upon the effect obtained, and should vary from seven to twenty-five minutes." In aged or very fat persons, or in those of feeble constitution, in whom the temperature

rarely exceeds 103°F., tepid baths are administered, for from twenty to thirty minutes, between the hours of four and seven a.m., and this, especially if assisted by a dose of quinine, will generally suffice to keep down the temperature for a very considerable time. As long as the low temperature lasts, the heart, so to speak, takes a rest; of course the baths may be repeated at any other hour in the day. The careful examination of the pulse will readily detect when the proper effect of the bath has been attained. With young children the wet sheet may be used.

In extreme cases of pneumonia, where the temperature is much elevated, the fever can only be subdued by the most energetic use of the bath. The author gives us most convincing evidence of his own faith in its use when he tells us that in the case of his own child, where the temperature rose above 105.8°, and returned of quickly after baths 60.8°F., he found himself compelled to reduce the temperature of the water to 41° and 42.8°F., and to continue them for ten minutes. His child recovered, and at no time during the employment of these extreme measures, extending over several days, was there the slightest indication of collapse. One precaution, however, is most positively insisted on;—a patient with pneumonia must never be bathed without the administration of stimulants before and afterwards, and the amount of stimulant must be increased when water of a lower temperature is used, or the duration of the bath is lengthened. Stimulants should be used after the bath, because the cooling process, which does not reach its maximum till from fifteen to thirty minutes later, is very apt to produce symptoms of collapse in persons with feeble hearts. If the bath be quite cold a stimulant is given before the bath, repeated while he is in it, and immediately after he leaves it. No absolute rules can be laid down; the quantity must be determined by the character of the pulse. Once more, he says, "let me insist most positively, that if we wish to treat pneumonia by cold baths, without unfortunate accidents, we must not spare stimulants."

In addition to the direct abstraction of heat, quinine is always used. "Above all other antipy-