

in diseases a high temperature has much less significance in children than in adults. The regulation of temperature seems to be chiefly under the control of some part of the nervous system, and the natural means by which body heat is reduced are radiation and evaporation. Experiments with quinine on healthy children, 10 and 13 years of age, made by Dr. Ringer and Mr. Gill in 1868, showed that it never reduced the temperature except in very large doses, and in no case more than $.4^{\circ}$ F. (2-5). I have already quoted from Wagner to show that variations amounting to four or five times as much occur in health independent of any drugs or treatment. Quinine in sufficient doses to reduce the temperature even this much, produced noises in the ears, buzzing, ringing, headache, dimness of vision, and sickness of stomach. Experiments on healthy dogs with quinine shows that in large doses it causes vomiting and diarrhoea of a most obstinate character. Even Binz himself admits that "neither the fever of relapsing fever nor of certain forms of erysipelas is much affected by quinine." "Probably this arises not from the extraordinary severity of the fever but from the nature of the pyretic agent." "Even in those cases of fever which are amenable to its effects, its effect is *only appreciable* when it is given in large doses at that time of the day when the temperature is lowest and when given in an easily digestible form." Leibermeister, in his article on typhoid fever in "Ziemssen's Cyclopædia," says that "the true danger consists in the deleterious influence of a high temperature on the tissues, by means of which necrobiosis is brought about, manifesting itself anatomically as parenchymatous degeneration, paralysis of the heart occurring first, next of the brain, and then the other organs." He gives no reason for attributing these results to prolonged high temperature. He says also that continued high temperature is much more dangerous than intermittent high temperatures. For this reason he recommends quinine to produce intermission in the fever. He has great faith in antipyretic measures, including cold bathing, quinine, digitalis and veratrum. When the cold bath cannot be employed he relies upon these drugs, and when quinine fails he says that digitalis will nearly always succeed—a very important