

suffice to reduce temperature; in other cases derivative measures in the form of free application of counter-irritation to the chest wall succeed, if combined with the promotion of large secretion from the whole bronchial tract by saline expectorants, to which the addition of aconite or digitalis is often desirable. When regard to counter-irritation, vesication, and specially with the preparations of cantharides, if applied so as to produce a large blister over the affected lung, is far more efficacious in reducing temperature than any amount of poulticing or iodine painting. The best form of expectorant in these cases is the effervescent carbonate of ammonia draught, to be given two or three times a day, to which may be added 4 to 5 minims of antimonial wine, and the same dose of tincture of aconite. This, with the ordinary precautions of rest in bed during the fever rise, reduces the heat in a great proportion of cases of tuberculization. Where these measures fail, quinine, given in an effervescent form in 3 to 5-grain doses, just before and during the rise of the temperature, is advisable. Salicylate of soda, or salicin, may also be tried. Professor Jacoud's plan of giving hydrobromate of quinine in doses of 10 to 30 grains every night for three consecutive nights, which, he states, lowers the temperature in this stage of phthisis for four days, failed entirely in my hands in two cases in which a fair trial was given to it, though cinchonism and great mental excitement were thereby induced.

The treatment of the pyrexia of softening and excavation of tubercle is encompassed by far greater difficulties, as here we have to deal with suppurating surfaces out of surgical reach, from which reabsorption of pus and septic products with our old enemies, the tubercle bacilli, is continually taking place, and consequent infection of fresh tracts of the lung, so that we have to treat suppurative fever and the pyrexia of tuberculization in the same individual.

Small wonder is it that our efforts to reduce such fever result, for the most part, in temporary, and rarely in permanent, success. The temperature falls under treatment, but rises directly that treatment is suspended, and generally the pyrexia only subsides when excavation is for a time complete, or a cavity has still farther extended and the patient's vital powers have become more and more collapsed.

The number of medicines which have been tried to reduce the temperature of this stage is an almost endless list, which I shall not attempt to exhaust, but will enumerate those of which I have most experience. *Quinine*, in doses of from 5 to 20 grains dissolved in acid, undoubtedly will temporarily reduce temperature, but as cinchonism is soon produced, it is impossible to persevere for any length of time. The effervescent quinine draught before mentioned, combined with digitalis tincture (10 minims) is far

more effectual because it can be continued longer, and I have had the best results from this antipyretic. Heim's pills, often called Niemeyer's containing a grain of sulphate of quinine and digitalis, combined with half a grain of opium, given three or four times a day, also exercises a good temporary effect. Salicylate of soda and salicylic acid reduce temperature, but cannot be continued long on account of the lowering influence of the drugs. Of the two, salicylate of soda is preferable, and, when given in 20 grain doses every four hours, soon has the desired effect, and may be afterward given twice in the afternoon to control the pyrexia.

*Salicin*, if added in 10 grain doses to the effervescent carbonate of ammonia draught already mentioned, considerably strengthens its antipyretic effect.

*Iodoform*, in doses of 3 to 5 grains, three or four times a day, I tried in a number of cases, but with no good result whatever.

*Kairin* and *chinoline* were both so nauseous that I cannot say I succeeded in persuading the patients to make a fair trial of them.

*Antipyrin* I have used very largely, and for a long time it was my principal febrifuge. It generally reduces the temperature if given for a few days in 15 to 30 grain doses every four hours, by inducing perspiration, but if persisted in, is followed generally on the eighth day by a measly rash, which disappears on the drug being omitted. Anorexia and vomiting, and sometimes collapse, have been noted in cases where antipyrin has been continued for a lengthened period, as is necessarily the case in phthisical pyrexia.

Its action is very rapid, the temperature often falling within an hour of the first dose, and the fall is often very great. I have known the thermometer fall from 103 deg. F. to 96 deg. F. in a few hours, where 20 grains were administered every two hours for a day, but it rose again when the doses were only required every six hours. This is the great difficulty—we have often to choose between pyrexia and saturating the patient with antipyrin, and in the end generally prefer even the former.

*Resorcin*, a derivative of benzol, in 10 to 25 grains has a similar effect to antipyrin, and was very successful in reducing the temperature of one case of acute consumption under my care.

*Thallin* is a very powerful antiseptic derivative of coal tar, of which I have used the sulphate and tartrate in two cases for reduction of temperature according to the recommendation of Ehrlich and Laquer.

In a case of cavity with high pyrexia, which hydrobromate of quinine had failed to reduce, but which had temporarily subsided under antipyrin when carried to the extent of producing the measly rash, after its omission thallin was tried in 1-grain doses every hour, with speedy reduction of temperature from 101.5 deg. F. to