

Field, Journal of Physiology, 1878.) When then the respiratory centre is exhausted by the efforts required to aerate the blood, where the amount of useful lung is limited, and the respiration drops low in deep sleep, sweating, or cutaneous respiration, is the result. Belladonna is a direct stimulant to the respiratory centre when failing, either from disease or from a toxic agent, and so is useful in two ways. It arrests the action of the sudoriparous glands on the one hand; and by stimulating the respiratory centre on the other does away with the necessity for hidrosis. Consequently it is well to give atropia with morphia whenever it becomes necessary to give the latter drug to relieve the night cough of phthisis. The antagonistic actions of morphia and belladonna are now sufficiently accurately ascertained to enable us to combine them in an intelligent and practically useful manner. Belladonna does not act so powerfully upon the hemispheres as to interfere much with the action of morphia upon them; while its sedative or paralyzant action upon the ends of the vagi (the sensory nerves) in the lungs renders it a useful adjunct to the morphia in arresting cough—a reflex action exerted by the presence of an irritant in the lungs in the form of the neoplastic growth. Not only that, but morphia lowers the activity of the respiratory centres, indeed kills by arresting the respiration, and after it the circulation: while belladonna is a direct stimulant to both. Consequently, even if there be no night-sweats, when it becomes necessary to exhibit opium or morphia for the night-cough of the phthisical it is well to combine with it a dose of atropine, to antagonize the effects upon those rhythmically discharging centres of the respiration and circulation—effects which are unsought and undesirable, yet unavoidable. (For the evidence for these statements the writer must refer the reader to his Essay on the Antagonism of Therapeutic Agents: and what it Teaches, 1878.) If there are already night-sweats the atropia will prevent the opiate making them worse; and often will be found effectual in checking them while not interfering with the desired effects of the opiate. The pill in common use by the writer at Victoria Park Hospital consists of one-fourth of a grain of morphia (hydrochlorate), a fortieth of a grain of atropia, with a grain of capsicum in powder, and three grains of pil aloë et myrrh. At the West London Hospital, of one-third of a grain of morphia with one-thirtieth of a grain of sulphate of atropia. This pill is well borne in almost all cases. The morphia checks the cough and procures sleep, while the aloëtic vehicle prevents the bowels being locked up, and the appetite diminished by the action of the opium upon the local ganglia of the intestinal tube, and on the sensory nerves of the stomach. By such a combination indeed we

can secure the desired action of the opiate, and get rid of the effects which are objectionable and detrimental to the patient. So far I have never once seen any of the toxic effects of atropia, as dryness of throat and indistinctness of vision, follow the use of this combination; the morphia apparently combating such manifestations. This use of opium and belladonna together will be found most serviceable in practice.

If belladonna pushed freely does not arrest the night-sweats—an occurrence very rarely encountered—then oxide of zinc with hyoscyamus or sulphate of copper with opium, may be tried. Dover's powder, conium, quinine, the mineral acids, or tannin, or gallic acid, or ergot may be tried. Then comes the question of applications to the skin. Vinegar or a weak solution of a mineral acid may be washed over the surface with advantage. Dr. Lewis Sayre informs me that an irregular practitioner in New York many years ago gained a great reputation in the treatment of phthisis by sponging the patient with hot vinegar containing a considerable quantity of powdered capsicum. He was very effective in arresting the night-perspirations; and, as usual, when these exhausting sweats are checked the appetite returns and food is relished and digested. However attained—if attainable at all—the first thing to be done is to check the night-sweats; and the hot vinegar with cayenne pepper is useful in very obstinate cases.

Attention to the stomach and bowels, or, as our predecessors used to say, *primæ viæ*, is essential and scarcely of secondary importance to the treatment of night-sweats. It may be heterodox to say this in the present worship of physical signs, but it may be said truthfully enough—that with phthisical patients it is more important to study the tongue than to go over the chest with the stethoscope. The latter may doubtless tell the extent of the disease, and so demonstrate the physician's skill in diagnosis: but the other affects the patient; and attention to it may save a life, and neglect of it lose one. When the tongue is covered with a thick fur, it is useless, or nearly so, to give iron and cod-liver oil; for the tongue is the indicator of the state of the intestinal canal, and absorption through the thick layer of dead epithelium cells is well-nigh impossible. It is well here to give a compound calomel and colocynth pill every second night, and to prescribe a mixture of nitro-hydrochloric acid, or phosphoric acid with infusion of cinchona, three times a day, till the tongue cleans. Or at other times the tongue is raw, bare, and denuded of epithelium: Here it is of cardinal importance to put the patient on a mixture of bismuth with an alkali, and a milk dietary. Often milk and seltzer-water will agree where milk alone is too heavy and too constipating. As long as the tongue is