

of the treatment of traumatic tetanus is this: *the PROBABILITY is without Calabar Bean the patient will die, and with it he will live.*

The last point of interest about Calabar Bean, upon which I shall dwell at any length, is its ANTAGONISM TO STRYCHNIA. From the correspondence between tetanus from strychnia and tetanus from other causes, the utility of the remedy in the one naturally leads us to expect it would be serviceable in the other. The actions of the two agents on the same parts or functions are diametrically opposite. Strychnia causes undue excitation of the motor column of the spinal cord, or augments the polarity, as the fact has been differently expressed; Calabar Bean represses this excitation, reduces this polarity. Strychnia induces a tetanic state of the muscles; Calabar Bean a paralytic. Strychnia produces inordinate irritability of the sensory surfaces; Calabar Bean does not. It is, therefore, to be expected one could counteract the other. Dr. Fraser of Edinburgh and Dr. Watson of Glasgow have performed a large number of experiments to show they really do so. In rabbits, cats, dogs and frogs, where tetanus had first been developed by strychnia, the subsequent use of the bean prevented the recurrence of the rigid spasms, and, in their lieu, left the opposite state of relaxation; so that there is no doubt whatever it will, in sufficient quantity, control the tetanic action of strychnia. This it accomplishes, not as a chemical antidote, but, by its power, to establish a vital change in the state of innervation. You may now, perhaps, be surprised to hear, that although it can achieve so much, yet still many of the animals, experimented upon, died. But the reason is sufficiently obvious: one poison followed another,—two poisons were at work in the system, so that if one failed to kill, the other might be fatal, since after annulling the action of the other, a surplus quantity large enough to destroy might be left; or even where there was no surplus, after the first had been nullified, the shock already communicated might be too exhaustive to allow of recovery. Again, from the duration of the capability of strychnia to act as a poison, being longer than the duration of Calabar Bean to subdue its effects, it has happened that after the latter agent has quelled the operation of the former for a time, and the animal seemed likely to recover, a return of the toxic symptoms of strychnia took place. I would like you to give these considerations their proper due, from their bearing upon the subject of the treatment of tetanus, as this will keep you from falling into the false idea that as are the results of Calabar Bean in strychnia tetanus, so will they be in traumatic tetanus. Of the two cases, most advantages are upon the side of the latter; the remedy is safer, there is not the need of such a large quantity, instead of being administered at one time it is