sented elsewhere, if the full quantity have been dispensed, the order or prescription would be null and void. If this should be impossible, I would suggest that only one druggist, in a population of ten thousand, should be licensed to sell poisons of this description; and that his premises and books should be regularly inspected by a Government inspector, like the brewers and beer-shops; that his term of licence should be two or three years, when another druggist in the town should have his turn. This plan should be so arranged as not to interfere with the dispensing of physician's prescriptions.

Another subject, bearing somewhat on the above, demands our attention; and that is, the prevention of the use of arsenic in the manufacture of our wall-papers, dress-fabrics, etc. The common idea is, that the only papers which contain this poison are certain green shades; this is a great error. A case in point came under my notice very recently. Being suspicious that a newly decorated house had something to do with the constant illness of the children I was attending, I had nine pieces of different paper examined, only one of which number contained any green, and I found that seven contained arsenic in large quantities. Now, if these papers be not varnished, what happens is this. The rooms are exposed frequently to the damp atmosphere; then, on a fire being lighted, the heat on the damp walls causes the surface of the paper to pulverise; and you will find, by brushing your coat-sleeve over the surface, that it will be covered with dust containing all the colouring matter of the paper. That this will give rise to irritation of the mucous surfaces of a child's eyes, nose, and throat, I think you will most of you allow. Surely, if decorations cannot be made without the mixture of such a poison, the sooner we go back to the old plan of having our sleeping-rooms and nurseries white-washed, the better. I therefore consider steps should be taken to put a complete stop to this evil, and this, I conceive, should come under the Sanitary Act. Dressmakers have told me that they often suffer for days from sore-throat, and irritation of the eyes and nose, after making up ladies' ball-dresses of bright green gauze. Surely, this should no longer be so; and I do think it is through the members of our profession that this matter should be brought under the notice of the Government. And I consider one of the primary duties of an Association like ours is to point out to our legislators these evils which exist, and help them in framing measures for strengthening any Acts of Parliament which treat on this subject.

ON THE USE OF BELLADONNA IN CERTAIN CASES OF HERNIA.*

By W. SMITH BATTEN, M.R.C.S.Eng., Bromsgrove.

I BRING before your notice a few crude suggestions on the treatment of certain cases of hernia by the administration of belladonna. In the first place I will mention the cases, and then proceed to the physiological action of the drug in question.

The first case is that of an old man, A. B., aged 79, by occupation a postman, remarkably healthy and muscular for his time of life, who had suffered from hernia of the right side for some years. About a week before sending for me, he had been wheeling a heavily laden barrow, when he felt the rupture suddenly give way, causing him great pain. He immediately went into the house and applied hot flannels, etc., which had always given him relief on previous occasions. He continued this treatment for some days, until the woman who nursed him, finding he had had no relief from the bowels since the accident, and that he began to vomit by the mouth what ought to have gone the other way, sent for medical aid. I was called in on the 4th of May, 1878, and tried all the ordinary recognised means for reducing the hernia, which failed, the patient refusing to be placed under chloroform. I gave him two grains of opium pill, and ordered his immediate removal into the Cottage Hospital. On admission, I met my colleagues in consultation, and they decided an operation was the only means of saving life; but one gentleman, having unfortunately shown a piece of cold steel, so alarmed the patient, that with all our persuasion we could not induce him either to take chloroform or to undergo the operation. In this state I found him an hour afterwards, more dead than alive; and the idea then struck me—having only lately heard some very excellent papers on the use of belladonna in obstruction of the bowels and its physiological action thereon—that the drug might be of service in the present case. I therefore ordered the patient half-drachm doses of the tincture, to be taken every half hour. I saw him in two hours' time, when he had taken four doses. The pupils were slightly dilated, and he complained of slight dryness of the throat, but the rupture could not be moved. I

again saw him in an hour; the pupils were largely dilated, and the rupture passed up easily. No vomiting occurred during the administration of the drug. Unfortunately, about two weeks after this, while doing some garden work, contrary to orders, his truss not being properly adjusted, the rupture again came down. Reduction again failed, but three half-drachm doses of the tincture every half hour overcame the difficulty. Having ordered a new truss, the patient has not again required my assistance, and at present is well and in good health.

The second case is that of a baker's assistant, a pale, pasty youth aged 19. I was sent for about half-past two in the morning of March 8th, 1880. He had been suffering from a child from hernia of the right side, and the previous night had been lifting a heavy load of bread, when his rupture came down by the side of his truss. He was placed in a hot bath; taxis was applied and chloroform administered, but to no effect. I immediately gave him scruple doses of tincture of belladonna every hour. In four hours I again saw him; he was entirely under the influence of the drug; the pupils were largely dilated, and he was complaining of dryness of the throat. I tried but failed to reduce the rupture, and being afraid, on account of his youth, to administer more of the drug, told the patient to work at it himself; but he fell asleep, and when I called again in a couple of hours and awakened him, he put his hand down, saying, "It's gone up, sir." I see him constantly, and he has not again been in trouble.

Belladonna, or its active principle, atropia, in small doses, acts on the circulatory system by increasing the frequency of the pulse with rise of the arterial pressure. In large doses, it causes a fall of arterial pressure with the pulse still increasing. Upon the heart itself, atropia acts as a direct depressant poison, though for this end a very large dose of the alkaloid must be administered.

Brown Séquard says positively "that the drug has the power of exciting the muscular fibres of the arterioles." Wharton Jones (in the *Medical Times and Gazette*, 1857, p. 28) announces the fact that, if atropia be dropped upon the web of a frog's foot under the microscope, the vessels can be seen to contract.

Meurot, as the result of his studies on the frog's web, concludes that in the first stages of the poisoning a very slight contraction of the vessels takes place. Wood also says, "the evidence derived from direct observation of the capillaries seems to me to be, on the whole, decidedly in favour of their contraction by minute doses of belladonna, and that the rise of arterial pressure just spoken of, is due to a contraction of small vessels."

Acting upon the abdominal canal, belladonna is a powerful excitant of the contracted muscle. Phillips says that in large doses it produces paralysis in the ganglionic apparatus of the intestinal canal, and possibly in the unstriped muscular fibres themselves. There can be little doubt, however, that the drug acts directly upon the bowel as a stimulant and co-ordinator of muscular action, and thus, secondarily, as a controller of any irregular spasmodic action that may be present.

In conclusion I would say that, though the knowledge of the physiological action of some of our most important drugs on the living human organism is at present in a very crude and undigested state, doubtless from timidity on the part of the medical practitioner to push their action till some decided physiological symptoms are apparent, still I think that, of all drugs, since the discovery of its alkaloid by Mein in 1831, none have called for greater research as to its physiological action and its therapeutic properties than belladonna, and that the action of the drug in the two cases I have mentioned has been to lessen the calibre of the congested vessels of the constricted bowel, and contract the non-striated muscular walls of the protruded gut, and thus to render its reduction into the abdominal cavity more easy.

ANIMAL VACCINATION IN INDIA.—Animal vaccination continues to be carried on in Bombay, Poona, and Kurrachee, a total of 470 heifers having been inoculated last year with successful results in 456 instances. Thirty or forty animals were operated on month by month. The months of August and September show a larger proportion of failures than any other months, while from January to June only one failure is recorded out of 236 operations. In Bombay, animal lymph alone is kept up; in Poona and Kurrachee, both human and animal lymph is in use. The total cost of the animal vaccine arrangements was 2,700 rupees.

SURGEON-MAJOR G. C. CHESNAYE, Indian Medical Service Bengal Establishment, has been appointed Honorary Surgeon to the Viceroy of India, in succession to Surgeon-Major R. W. Cunningham, M.D., deceased.

* Read before the Worcestershire and Herefordshire Branch.