

cal operations in hospitals and private houses are the direct result of drainage defects and therefore can and ought to be prevented. Preventive medicine has long been producing such facts and long have we turned a deaf ear, and we of the medical profession in general, are only beginning to see the great reality of her teaching. If any one challenges this assertion in reference to my own profession I will reply by the enquiry, how many medical men can he tell me of who understand the sanitary condition of their own houses, or have adequately ascertained that those conditions are, so far as our knowledge at present goes, free from dangers to health? If by any possibility it could be brought about that every medical man in the kingdom should realize the necessity for looking into the state of his own house, and act upon that conviction, I feel certain that the discovery would be made in so great a proportion of instances that they were living over a pent up pestilence, that we should at once have an army of sanitarians, earnest and kind to ferret out unsuspected sources of illness." Dr. Teale goes on to say that he has been taught by observation and experience that if we are ever to have sound sanitary legislation, if we are ever to have our sanitary arrangements carried out in first-rate workmanship, it must be by the education of the public in the details of domestic sanitary matters, so that, realizing their vital importance, knowing what ought to be avoided, and able to judge of the correctness and quality of the work done, they may demand, and so obtain, first-rate workmanship. When diseases arise which we call preventable, depend upon it some one ought to have prevented it. Probably no work done throughout the kingdom is so badly done as work in house drains and pipes which are out of sight and I have no hesitation in declaring that defective work is due both to ignorance and dishonesty on the part of the workmen. Many more valuable opinions could be quoted to the same effect and thousands of instances could be given, where through the culpable carelessness, ignorance or neglect of the workmen hundreds of lives have been sacrificed. Time, however, will only enable to briefly allude to one. I am sure there are but few present who will not be able to recall the memorable instance of the Toronto Lunatic Asylum, which was perhaps one of the most notable illustrations Canada has ever afforded of the sad consequences

of defective drainage. Through the blundering, the stupidity, or the carelessness of some one, the basement drains had never been connected with the main sewer, and for four years after the occupancy of the institution all the sewage from kitchen and water-closets freely flowed into the basement, forming an enormous cesspool. It is needless to say that during all those years there was much sickness among the inmates and attendants and many were carried off by erysipelas, dysentery, typhoid, etc., till finally a fatal outbreak of cholera, regarded at the time as the genuine Asiatic type, lead to a thorough investigation and a discovery of the cause.

It is plain that a system of house drainage which will provide securely against sewage gas, must be perfect, both in construction and adaptation. The best possible material must be used, and the greatest care taken in the work; with the single exception of a defective joint there is as much danger as though the whole system were deficient. House drains should never become ventilating pipes for the street sewer, nor should they bring cesspools into or under a house in useless traps and catch-basins. House drains should carry waste out of a house, not much nor little, but all, and do it promptly. When that which is intended for the street sewer is started on its journey from kitchen sink, wash basin, or water closet, it should be afforded a means of reaching its destination at once and without interruption. Not an atom of filth should be allowed to cling to the sides of the waste pipes, nor be held in solution in some trap until it begins to decompose and give off its dangerous gases. A perfect system of house drainage will not leak, nor even contain any foul odors. It will not get out of repair at some unexpected moment, nor will it soon wear out. There is no more reason why there should be perishable material used, and defective joints made in house drains than in the pipes which conduct illuminating gas into a house. The latter are air tight and gas tight, so should the former be. House drains should be recognized as part of a house, not as an obnoxious adjunct, and be as accessible as any other part of the building. A perfect system of house drainage is possible, and until its essential details are understood by those who build houses to live in, the supervision, and construction of it should be entrusted to a sanitary engineer, just as the construc-