

blood-poisoning from noxious air or some other matter. For example, I had two cases of illness in the same house; one was typhoid fever, which ran its ordinary course, and the other one of high febrile character, lacking many of the peculiarities of true typhoid; in it the temperature of the body returned to normal on the ninth day, in the other on the 22nd. I am not in a position to say how far this parallelism may be sustained. That certain things in chemistry take nine days to nitrify, while others take less, is in this connection only an additional fact, suggestive of thought and, of course, further inquiry.

All the serious cases of bleeding hæmorrhoids I have had to deal with have been cases of persons living in unhealthy dwellings. I am, of course, aware that in all such cases there is a more or less disordered condition of the liver and digestive organs; but there is just as good reason for ascribing the disordered state of the liver to piles, as piles to disordered liver. As a matter of fact, in very many instances, they are both only features of the one complaint, dependent on some form of malsany.

It would be too severe a tax upon your time, I fear, if I were to continue this discourse much further. I have noted what seemed to me good cases of hæmaturia resulting from protracted imbibition of noxious air and impure water, which, when the offending elements were removed, began to improve, and ultimately recovered. The bleeding in scurvy, purpura, and some other disorders as well, are all of a similar nature, and only too familiar. The common saying that any spontaneous or passive hæmorrhage is only an effort of Nature to right itself may be very true, but what is the cause of the wrong that has to be righted? And then, what is the wrong itself? It strikes me we must pay closer attention than ever to what has aptly been said to account for the progress of modern engineering, and that is to "the next to nothings" in investigating the causes of diseases.

ON LEAD-POISONING FROM SERVICE PIPES, IN RELATION TO STERILITY AND ABORTION.

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THE following cases are of interest, inasmuch as they suggest, if nothing more, a possible danger arising from the supply of water through leaden piping for domestic purposes.

CASE I.—Mrs. T., aged about 32 years, was confined in 1882. Since then she has had progressive ill-health, with constipation, digestive disturbances, frequent colic, rheumatic pains, and irregular menstruation, with now and then severe menstrual hæmorrhage. After cessation of menses for eight weeks an abortion occurred on March 17th, 1884. After cessation of menses for seven weeks, another abortion took place on September 10th, 1884.

Colic continued to be frequent, and severe constipation remained obstinate, and recurrent attacks of metrorrhagia became alarming. I had for a long time been of opinion that the water-supply, which came through lead piping of some length, was the cause of all the foregoing symptoms, and in the early part of 1887, my patient having been confined to bed for some months, iron piping was substituted. After this there was only one attack of colic, and no severe hæmorrhage. The bowels became regular, and menstruation became normal for a time. Pregnancy ensued, and my patient was confined of a healthy child on March 2nd, 1888. Since then she has remained in good health.

CASE II.—Mrs. C., aged about 30 years, has had one child some seven years ago, in 1882. She came under my care in 1885, suffering from constipation, indigestion and colic. She has irregular and frequently profuse menstruation. She aborted after suspecting pregnancy for eight weeks, on January 6th, 1886. She has a blue line on the gums. I ascribed her abortion and previous illness to lead piping, and these were removed and iron pipes substituted. Colic became less severe and disappeared; the bowels became regular; menstruation became normal; then pregnancy ensued. On October 22nd, 1887, she was confined of a healthy child, and has since remained in good health. In the same house the servant suffered from rheumatic pains, colic, and constipation, until the removal of the lead piping, after which she regained her wonted health.

CASE III.—Mrs. F., aged about 30 years, has two children. The last was born on September 7th, 1884. After this her health became seriously impaired; she had severe digestive disturbances, rheumatic pains in the limbs and loins, constipation, colic, and very irregular menstruation. Her life became a burden to her, no treatment being of any avail. I told her husband that I believed all her symptoms were due to the water-supply, but he ridiculed the idea. I referred him to Cases I and II. Even after receiving their evidence, his scepticism remained, but he removed the lead piping, and substituted iron. The result was as remarkable as in Cases I and II; all the symptoms disappeared and menstruation became regular. Then pregnancy ensued, and on May 11th, 1887, my patient was delivered of a healthy child, and has since remained in good health.

I do not record these cases in a dogmatic spirit, nor do I aspire to scientific accuracy in my deductions from them, but there can be little doubt that in Cases I and II the cause of abortion and hæmorrhage was water contamination by lead, and in Case III one may reasonably suspect lead as being the cause of all the symptoms.

It has fallen to my lot to observe many cases of plumbism, and its relation to sterility and abortion only touches the very fringe of a vast subject. The influence of lead on the nervous, vascular, muscular, lymphatic, and digestive systems merits greater consideration than has hitherto been devoted to it.

To suppose that plumbism means only wrist-drop and paralysis of the extensors of the forearms seems to me to be illogical. I believe that in plumbism, neuritis is not confined to any particular set of nerves. Is not lead colic due to paralysis of the nerves regulating the muscular coats of the intestines? What is the meaning in cases of lead-poisoning of the tense pulse, the liability to epileptiform seizure, to cerebral and other hæmorrhages, to gout and uric acid, and to albuminuria and rheumatic pains? Surely these point to both nervous, vascular, and metabolic derangements which open up a wide field of inquiry for those who are interested in our food and water supply, and in public health generally.

This paper is written only to suggest grave possibilities to those who at present barely recognise a serious source of danger, and although I personally am satisfied of the far-reaching and lethal influences of lead in relation to many conditions not generally regarded as having any connection with it, yet I would prefer that those with more opportunities at their disposal than I possess would follow out a line of investigation which I have merely indicated. I am satisfied that they will find a fertile field for research.

NOTES ON AN EPIDEMIC OF SMALL-POX AMONG KAFIRS IN THE TRANSKEI.

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IN the JOURNAL of August 25th, 1888, appears a very interesting communication from Surgeon-Major Pringle on vaccination, and its efficiency, when properly carried out, as a preventive against small-pox. Read in conjunction with the above-mentioned article, the following notes may be of value. The district in which the experiences to be related were gained was a very large one, about 80 miles across, and contained a black population of several thousands. Practically the inhabitants were unvaccinated. In September, 1884, the first cases of variola occurred among the community. Four natives, who had been working at the diamond fields, where the disease had been prevalent for twelve months,¹ started from Kimberley to return to their home in the Xalanga district. After a journey on foot of one month they arrived within 20 miles of their destination, when one of the number became ill, and remained at a kraal (village),² while his companions

¹ At this centre of industry the nature of the disease had been variously diagnosed by the medical men, some of whom eventually carried their differences to the law courts. The BRITISH MEDICAL JOURNAL, when referred to as arbitrator, decided in favour of the disease being specific (see JOURNAL, 1884; South African Medical Journal, 1884).

² In South Africa the term "village" can hardly be used strictly; the huts are usually placed in groups wherever water is convenient and pasture and arable land obtainable. In thickly peopled parts huts occur every few hundred yards.