to note how remarkably well cases of iritis do under mineral water treatment. We have patients sent to us with recurrent iritis, who rapidly improve, and, what is still more important, do not usually relapse. Mr. Beaumont, who has seen a considerable number of these cases, doubts the very existence of rheumatic iritis at all, and believes the cases we see in Bath are almost entirely gonorrhoeal, and that those which are not are due to some other form of toxæmia. Experiments by Wickham and Degrais show that radium is not, strictly speaking, bactericidal, but that it so modifies the culture medium as to make it inimical to the growth of the gonococcus. They are of opinion that one millionth part of pure radium in water will act on the cultures. If these views are corroborated, it is probable that in the near future the whole treatment of gonorrhoea and its sequelae will be revolutionized. Gonorrhoeal ophthalmia at once strikes one as a disease in which some confirmation of these hopes should be sought for.

During the last few weeks I have been treating an old lady of 75, suffering from a long-standing atrophic scirrhus of the left breast, by exposing it to the gas from the Bath springs. The ulcerated surfaces were exposed for ten minutes daily, and after twelve applications all the ulcers had healed and some of the surrounding induration had disappeared. This is the first case, I believe, of malignant disease in which the gas has been used in this way. A single case is, of course, of no very great value; nevertheless it encourages us to repeat the experiment, let us hope with equal success.

One final word more with regard to radium. Many of us believe that in this element we have found the explanation of the therapeutical effects of mineral water, but beyond a declaration of our faith we dare not at present go. It is a postulation that would explain the accumulated evidences of the ages. Every biochemical fact concerning it dovetails with the clinical effects of its application. Is it, then, any wonder that we balneologists regard radio-activity as the unknown god, and the blind worship of ages and the empirical faith of centuries as justified? To us the unknown god and his shrine are alike worthy of our homage.

REFERENCES.

¹BRITISH MEDICAL JOURNAL, March 16th, 1912, p. 617. ²Ibid., February 4th, 1911, p. 243.

THE EFFECT OF UNSUITABLE NECK CLOTHING ON HEALTH.

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I WISH to bring before the profession the important bearing of collars and other forms of neck wear upon health, and to show, by experience gained in three years' study of this subject, that it has not received the attention it deserves.

Any pressure on the neck acts most insidiously; the neck is cone-shaped, and a collar or band that may be perfectly loose at the middle of the neck, say over the cricoid, may be tight enough to exert some pressure when it drops into its working position, more especially in a slope-shouldered person. Again, a collar may seem roomy, but may, when a person is reading, get pressed by the chin on to important organs. Next, the habitual wearing of neck clothing not sufficiently large arrests the full development of the neck, with its numerous organs for communication between brain and body. This is of great importance during the period of growth. Also, in advancing life when the neck muscles are wasting and losing their tone, the vessels and nerves beneath become more exposed and sensitive to pressure.

I had often, when young, suffered from headaches, but my attention was not drawn to this subject till at the age of 69, when, after having had many years of gouty and rheumatic troubles, I got a clot in a small cerebral artery, attended with pain in the head, unsteady gait, vertigo, sickness, and double vision. Though I improved in some ways, yet at the end of four months the pain was increasing, and I was certainly going downhill. After some experiments, I decided to have all my neckwear made an inch larger. This sudden change rather affected me just at first; however, I improved so rapidly that in a fortnight

I could cycle. My blood pressure, which in consequence of hypertrophied heart had previously been very high, rapidly fell. But I found, in order to retain the splendid health to which I was restored, that it was necessary, as my neck, now that it was free, was enlarging, to continue to enlarge my neck wear. I had to continue doing this for three years, at the end of which time (the present date) my neck was actually 3 in. greater in girth. Almost from the first I lost all my gout, rheumatism, headaches, and indigestion as well. Strange to say, during this period, probably through freedom of the thyroid, I got thinner, and lost nearly a stone in weight.

Thus my neck had not previously been allowed to attain its proper size; and it is reasonable to think that this increase of neck material, while I was getting thinner as well as healthier, could not be mere fat or muscle. I then proceeded to try the same remedy upon others, and, being almoner of a charity in East London, I had a good field for it amongst the poor. I found, in all ranks of life, that most people were in the same condition as I had been, and that few had quite the full means of communication between brain and body that Nature would have supplied. For in all experiments the neck enlarged. It would appear that my own symptoms had been mainly caused by pressure on the jugulars, producing congestion of brain, and that this impediment to the blood current had in turn affected my heart.

One of the first cases in which I tried the loose collar was that of a clergyman who suffered much from attacks of aphasia. He would sometimes, too, get dazed, and almost "lose himself." He at once took my hints, and from that time, two years ago, to this has had no return.

A man of about 55 had frequent attacks of aphasia with vertigo. He wore no collar, but had a tight muffler. I got him to loosen this, and in a few minutes he was all right. I soon satisfied him as to the cause of his symptoms, of which at first he seemed doubtful, by getting him to again tighten his muffler, when he reproduced them. I subsequently found I could always produce aphasia in him for experiment by doing this.

I have met with many other cases of vertigo, generally with sickness, but all yielded immediately to the same remedy. Some had previously been under the usual treatment, but without success.

Dr. Phillips, of Coventry, told me he had noticed that neck pressure over the pneumogastrics was often the cause of indigestion, and I have found very slight pressure will do this. Just as a person sitting cross-legged may suddenly find his foot numb, so it would seem that one may insensibly get the whole of the viscera supplied by these nerves numbed and handicapped in their work.

In July, 1911, a lady asked me to see her parlourmaid, who had been ailing for some days with sickness, discomfort in the stomach, and pain in the back and legs. I said the cause was tight neck wear. Whereupon the mistress and a lady friend attacked me vigorously for the absurdity of my views. Both said any one could see the young woman's things were not tight, and that she wanted "a proper course of medicine," etc. I told her that medicine would be useless, and then asked the young woman if she would prefer "the proper course of medicine," or to get well at once straight away. She chose the latter, and retired to alter her things amid murmurs from the two ladies. The same afternoon the maid, feeling better, went to Hendon to see the flying, walked miles, returned quite well, and continued so in spite of the intense heat prevailing at the time.

Is not the undersized neck particularly noticeable in phthisis? In every case that I have met with of late this has clearly been produced by tight neck wear in fast growing young people.

In July, 1910, I found two consumptive children, a girl and boy, aged about 13. The latter had just been refused admission on account of tubercle to the Shaftesbury Home. Both had tight neck wear. The parents in each case readily took my hints. Nothing else was done for these children but to give them a fortnight in the country. Both most rapidly improved and very soon recovered, even after their return to the balmy air of Shoreditch, and were still quite well a year later.

A lady who a year ago had been sent to recruit in Devonshire for incipient phthisis was most tightly constricted in the neck and short of breath. She gladly took my advice and at once expressed relief, and I learn that she has recovered.

I found a girl of 19, nearly 5 ft. 10 in. in height, in advanced phthisis, with a neck only 9½ in. in girth at the cricoid. What room was there here for sufficient windpipe and nerve communication for a girl of this size? Her neck enlarged 1½ in. in three months, but the disease was too advanced for her to have a chance. Though she improved much the next fog killed her.

At an hotel near Torquay I was asked to see a slope-shouldered, ill-developed boy of 8, whose parents were very anxious about him as he had a weak chest. At first sight it almost looked as if his neck wear was sufficiently roomy, for directly you introduced your fingers it slipped up over them to where the neck was smaller, but on holding it in its working position I found it tight. On undressing the child he at once gave a full respiration of relief. I then showed the mother that the weight of the clothing had made a furrow round the root of the neck. This was at once attended to, and subsequently the parents told me they could almost see the child improve and develop from day to day, and six months later that he was perfectly well.

A Bluecoat boy of 14, but very small for his age, was sent during the holidays to run wild on the Norfolk coast, but while under these ideal conditions was found to have a weak chest, in which state he returned to town. He was ordered respiratory exercises for his ill-developed chest. On his father's side an aunt and other relations had died of phthisis, and on his mother's side he had lost an uncle of the same disease. I found his neck wear so tight that I could barely squeeze my little finger between the soft neck and the rigid clothing. Ten days later he was a different child. He then showed me that a finger wound which for nine months had refused to heal was well, his chest was well, and he has since done well in every way at school.

The lymphatics are easily obstructed by neck pressure.

A surgeon in North Wales, seeing that I had written a pamphlet on this subject, wrote to tell me he had had a hard tumour beside his trachea, which was regarded as an obstacle to life assurance. He slackened his neck things; the tumour was absorbed in four months. He then completed his insurance.

A man of 50, with malignant disease of the tongue, was suffering great pain. He had some enlarged glands behind and one in front of the left sterno-mastoid. He wore no collar, but had a flannel shirt, which appeared to compress him just above the inner end of the clavicles. I suggested he should loosen this, and before I left the house he expressed relief. In a fortnight the enlarged glands behind the muscle had entirely disappeared, the other was smaller, and all pain was pretty well gone; and though this did not seem to arrest the disease, he always said up to the last that I had given him great comfort.

A fat, clumsy girl of 15, who had had many fits, was stupid, troublesome, and gave great anxiety to her friends, had tight neck wear. This was subsequently kept loose, and four months later her mother told me she had very greatly improved.

Strange as it may seem, I have found the same treatment as beneficial in the gout and rheumatism of others as in my own case.

In January, 1911, I took in hand a retired army officer of 70, who had been a great sufferer from gout, rheumatism, lumbago, and sciatica. Six months later he said that from that time he had lost all his troubles, and had had better health than ever.

A working man, aged 73, who had for eighteen months been set fast from rheumatism in knees and hips and could only move by means of his arms, was induced by me to wear his neck things thoroughly loose. He lost most of his pain in a fortnight, and in nine months could walk about the room with a stick, and with this and a helping hand had even crossed a little street.

I have found the same thing invaluable in cardiac cases, apparently because the cause of the obstruction to the blood current has been removed. For example:

A lady fifteen months ago was approaching a critical condition from dilated weak heart of some years' standing. She had blue lips, dilated capillaries of face, shortness of breath, and great dyspepsia. I persuaded her to have her neck things thoroughly loose, and she is now in every way in enjoyment of the best of health. She is very active, and has quite lost her dyspepsia.

But these are only a few of the great variety of cases that I have dealt with successfully, and amongst them were several cases of migraine.

I find it important to protect the neck from pressure just above the inner third of the collar bone, and have had collars specially made for this purpose. In some cases it is as well not to relax the neck clothing too rapidly. As I have said above, I personally somewhat suffered at first from this. The too sudden removal of the support that appears to cause the high blood pressure is apt to produce faintness. For example:

A nurse noticed that a young child in her charge who had not been very well, went off into a stupor when undressed for bed. Thinking it a fit, she put the child into a hot bath. The child not coming round quickly, a doctor who was sent for said it was not an ordinary fit, and confessed himself puzzled. Exactly the same thing happened next day. A friend of mine who happened to be a relative of the family, and who had perused my pamphlet, suggested that the child having been too tightly neck-bound during the day, when the blood pressure became raised, had fainted by reaction on its removal. The child, subsequently more sensibly dressed, at once recovered, and had no more stupors.

Some of my friends have suggested that mischief may occur through pressure on the vasomotor or sympathetic nerves. Two of my friends who have had extensive medical experience among Eastern people tell me they have remarked that gout and consumption are almost unknown among those who have no neck covering at all. I have found that people of both sexes whom I have advised to have their things perfectly loose have given the best results. I see that many foreign surgeons and physicians are finding this out. Stimulants and hot weather dilate the capillaries of the head and neck, so that the neck wear may under these circumstances exert a pressure that it would not otherwise do. I am also convinced that too close wrapping up of the neck against cold is wrong. Quite as much warmth is got from a loose muffler as from a tight one.

What I am suggesting is always recommended to be used in first aid in any emergency, and is therefore surely useful to prevent an emergency. One must expect an occasional failure, but I only know of three.

One was an epileptic girl of 15. Though from the moment the loose neck plan was tried she ceased to have fits for six months and seemed wonderfully well, yet I heard that they returned later, after she and her friends had left my neighbourhood.

Two were men with rheumatic arthritis. Both improved much for a time, but as they were convinced they would "take cold" they soon returned to their old way. But as a fact these people seem less liable to take cold than others.

Though I have met with many exceptions, ladies are as a rule difficult to deal with, unless they are suffering severely, and even then it seems that some would rather suffer anything than not look smart. However, when they do for any reason adopt my plans I have found their personal appearance is immensely improved, as good health means good looks. Besides, I have found that when they have allowed Nature to have her way and take what neck-room she wants, they not only get good looks but may even regain their smartness.

TINCTURE OF DIGITALIS: ITS POTENCY AND KEEPING PROPERTIES.*

BY

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IN spite of numerous papers pointing out the great variability in the potency of different samples of tincture of digitalis, it is yet often prescribed without any safeguard but the limit of the pharmacopoeial dose. This is hardly a safe proceeding. Not only is the initial variability in potency very great, but the drug deteriorates on keeping. Consistent results can, therefore, be obtained only from samples of the drug which have been standardized at a recent date. Up to the present none of the alleged active principles of digitalis appear to have found much favour. Dixon¹ concludes a comprehensive review of the subject as follows: "Pharmacological and clinical investigations have not made a clear case for the substitution of 'active principles' for galenical preparations of digitalis in the treatment of patients. Those active principles are for the most part just as irritant as the infusion or tincture. They are neither more reliable and constant in action than a properly standardized tincture, nor are they absorbed more rapidly. They have the same tendency to accumulate and are much more expensive. The one advantage that certain of them possess over the pharmacopoeial preparations is that they may be given intravenously without ill effect."

Fortunately, the demand for standardized digitalis is now sufficient to have created a supply, and several firms of manufacturing chemists submit samples of their products to pharmacological tests before placing them on the market. I have been engaged in the physiological testing of galenicals for several years, and have accumulated a number of data regarding the potency of the tincture of digitalis.

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