

without tissue change). I diagnosed drug amaurosis and detected in the urine traces of lead which I then ascertained she had been taking in ten-grain doses nightly in the form of emplastrum plumbi for upwards of three weeks. Under treatment the right eye recovered perfectly, but the left, although it has improved considerably, is still very defective and likely to remain so.

The power of certain drugs to produce definite tissue change in the optic nerves (axial neuritis) is a curious property possessed by a variety of substances—alcohol, tobacco, lead, and other metals for instance, as well as quinine, salicylic acid, santolin, bisulphide of carbon, and various coal-tar products. Of these, according to my experience tobacco is the most frequent cause of impaired sight, not only on account of the nicotine which it contains and which in its natural form blinds the horses which graze upon pastures where tobacco is grown, as in some parts of New South Wales, but also on account of the pyridine, viridine, carbolic acid, and marsh gas which are set free when it is smoked. Alcohol probably comes next, while saturnine amblyopia among the workers in lead factories has been known for centuries. The lead may enter the system either with articles of food or drink, the workmen in the former case neglecting to wash their hands, or through the skin by means of hair dyes and cosmetics, or by silk threads which are weighted with sugar of lead and bitten instead of cut by those who use them. In my case the patient, finding herself pregnant, took diachylon in order to procure abortion, with no other effect than to cause blindness in one eye. That this should result in four weeks' time without other symptoms of plumbism, colic, leadline on the gums, palsy, or wrist-drop is indeed singular if not unprecedented.

With regard to treatment in such cases iodide of potassium should be given in large doses, the patient should use baths of sulphuret of potassium, take sulphate of magnesia, mercury, and pilocarpine, while the affected nerve should be galvanised with the continuous current, about 2 milliampères to each temple daily.

Nottingham.

STRANGE SUCCESSION OF FRACTURES IN A COLLIER, WITH REMARKABLE COINCIDENCE IN TIME OF OCCURRENCE.

By D. T. RICHARDS, M.D. GLASG.,
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As might naturally be expected from his hazardous occupation the collier is frequently injured by accidents underground. But the following particulars deserve, I think, a space in THE LANCET because of the strange series of fractures sustained by the man himself and his near relatives, as well as the remarkable coincidence in the date of their occurrence as far as the patient himself is concerned.

A man, aged forty-four years, short and well built, was first attended by me on August 26th, 1890, for a compound fracture of the left leg, resulting from a portion of the roof or top falling and striking him while following his employment in Risca Collieries. After being brought out and conveyed on a stretcher to his home on the hill-top, a distance of about three miles, a journey by no means easy to bear by a man with a fractured leg, I found on examination a crescentic wound nearly 3 in. long on the outer aspect of the middle of the left leg, and well peppered over with coal-dust. In spite of the temporary splints and scarf tourniquet applied by his fellow workmen considerable hæmorrhage had occurred, no doubt aggravated by the long, rough journey over an uneven road and up the hill. An anæsthetic was given and the tibia and fibula were found to be fractured near the same level, about half-way between the knee and ankle, and detachable sequestra were removed. After free ablation and cleansing with carbolised water and the limb being brought to a good position iodoform gauze was applied and the leg put up in a modified box-splint. For some hours, the patient felt easy, but during the night he was sick and the leg was painful, which kept him from sleeping. When seen next morning his temperature was 102° F., the pulse was

112, and the tongue was covered with dry white fur. After a grain each of calomel and opium he felt easier and slept. Suffice it to say the patient made an uninterrupted recovery and was able in about six months to resume his work as a collier underground.

The patient's previous history, told by himself and corroborated by others, is very remarkable. With the exception of an attack of typhoid fever, which he had when eighteen years of age, and two or three attacks of quinsy subsequently, he had not suffered bodily in any way. He was always very temperate and for about eighteen years a total abstainer. But his misfortunes in the mine were many and are remarkable from the fact that they all happened on the 26th day of August. Here is his record. At the age of ten years he fractured his right index finger. It happened on August 26th. When thirteen years old he fractured his left leg below the knee through falling from horseback, also on August 26th. When fourteen years of age he fractured both bones of the left forearm by stumbling, his arm striking the edge of a brick (August 26th). In another year, on August 26th, when fifteen years of age, he had compound fracture of the left leg above the ankle by his foot being caught under an iron rod and his body falling forwards. Next year, again on the same date, August 26th, he had compound fracture of both legs, the right being so severely crushed that it had to be amputated at the lower third of the thigh. This was caused by a horse, hitched to a tram of coal, which, running wild underground, caught him in a narrow passage, crushing both legs severely. After this he did not work on August 26th for 28 years, and little wonder, but in the year 1890 he forgot his fateful day and went to work, with the result that he sustained the compound fracture which I have mentioned in the beginning. After this he has studiously avoided working on August 26th, though never missing work at other times.

The patient's father is living, aged seventy-nine years, and has never had a severe injury. His mother died at the age of seventy-nine years. When aged sixty years she had compound fracture of the leg below the knee through being run over by a truck. Recovering, she enjoyed good health for fourteen years, when the old wound reopened and discharged small pieces of bone. The wound remained open for about a year, when under treatment it healed. From this time her health failed and her death, which occurred soon after, was attributed to the healing of the wound. The patient had no brothers, but his only sister, when ten years of age, fractured both bones of the forearm, refracturing the same in about three weeks by falling with her arm under her. One cousin had an arm amputated at the shoulder for injury and another cousin had a severe compound fracture of the leg, while a third had fracture of the leg from which he died. Of three paternal uncles one had his leg amputated for injury underground.

Risca, Mon.

SARCOMATOUS DEGENERATION IN AN UNDESCENDED TESTICLE; CAS- TRATION; RECOVERY.

By JAMES R. WALLACE, M.D. BRUX., F.R.C.S. IREL.,
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AN Anglo-Indian, aged twenty-five years, short, thick-set, and of good constitution, was born a cryptorchid, his left testicle having remained undescended from birth. There was always, as long as the patient could remember, a "lump" in the left groin. It had remained absolutely painless till about four months previously to his consultation with me, when he observed occasional acute pains in the swelling and a frequent sense of nausea. In a few weeks the pain became worse, the swelling more enlarged, and there was persistent vomiting, which confined him to his bed for a few days. The symptoms subsided, but with the resumption of his duties there was a recurrence of suffering. When I first saw him, on March 22nd, 1898, the lump in the groin was hard, tender, and non-fluctuant. The slightest pressure upon it induced nausea. Sulphate of magnesia with tartar emetic in small doses internally, the application of belladonna and glycerine to the swelling, with rest in the bed, gave complete relief

and for three weeks the patient was able to go about his work. On April 25th he had a recurrence of all the bad symptoms above described, but finding that the slightest exertion was attended with a return of suffering he was advised to undergo castration of the undescended testicle. Accordingly on April 29th he was placed under chloroform by Dr. William Coulter. I cut down upon the testicle, doing the bulk of the dissection with the handle of my scalpel. The main vessels leading to the tumour were ligated and the mass was cut off above the ligature. All bleeding points were quickly secured by pressure forceps so that the patient did not lose more than half an ounce of blood during the operation. The wound cavity was insufflated with iodoform and boric acid, a drainage-tube was inserted, and the incision was closed by horsehair sutures. Boric gauze dressings were applied and changed on the second day, when also the tube was removed. The subsequent progress was most satisfactory. During the operation I had the assistance of Mr. Arnold Caddy.

Remarks.—This case is interesting from the diagnostic value of the reflex testicular vomiting as the characteristic sign of the disease present. On cutting into the testicle after removal it was found to have undergone purulent inflammatory change, and as the structure of the mass seemed very much altered pathologically it was sent to Surgeon-Major J. F. Evans, the pathologist to the Calcutta Medical College, who reported on it as follows: "I find the tumour which you sent me on April 29th to be a round-celled sarcoma, with practically no trace remaining of the glandular structure of the organ in which the new growth arose. There is some evidence of inflammatory change and of hydrocele having occurred prior to the formation of the growth."

Calcutta.

RE-BREATHED AIR AS A POISON *PER SE*.

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THE noble work which has been, and is still to be, done by the bacteriologist can never be over-valued or over-applauded, but I think our attention is apt to be so absorbingly fixed on the ever-increasing cloud of organisms that we are somewhat in danger of losing sight of the effects of those gaseous poisons which are so prone to accumulate very literally under our noses in the present state of "civilisation" and overcrowding. The "Fresh Air Treatment of Consumption," which has been so lately hall-marked in a manner absolutely unprecedented, appears to be made up of three essential factors: (1) the discontinuance of the supply of bacilli from without; (2) the supply of an abundance of nutritive material to the tissues; and (3) the supply of an abundance of fresh air uncontaminated by the products of respiration. This seems to mean that the tissues if not too enfeebled may be trusted to deal with the bacilli already present if their metabolism is kept going at high pressure. Fresh air is now the "official" remedy in the treatment of tubercle. Why is it so ignored in the case of other diseases? We are told that the expired air of the phthisical patient contains no bacilli, so that apparently re-breathed air is not forbidden to him on account of these. Does the pneumonic or bronchitic breathe out bacilli? If so he would seem to require airing more than the phthisical patient; and if he does not, what then? A rise of temperature or the presence of bronchitis or of a patch of pneumonia in the phthisical patient is, I am told, no bar to his being officially aired. Has the pneumonic or bronchitic no need of special ventilation because his microbe is of a different breed?

Within the last three years or so I have known a severe case of double pneumonia (probably influenzal) treated by a specialist, without protest, in an unventilated little room with closed door and window and no chimney but with a paraffin lamp burning day and night to keep up the temperature. When I remember this and contrast the treatment of pneumonia by one eminent authority with the treatment officially recommended for phthisis by the other eminent authorities with the weight of the Colleges at their back, am I, a poor, unscientific, general practitioner, to be blamed if

I find it, like Dickens's millband, "awe a muddle"? And it is with the greatest humility that I venture to suggest it is possible when the air was created that it was intended not only for phthisical patients or patients suffering from pneumonia but for *all*—diseased and healthy alike—and that it is still the natural medium in which the poisonous products of tissue metabolism excreted by the lungs are further broken down and rendered harmless. With even more humility I suggest that it is a work of supererogation to heat air twice over—since everyone has, I suppose, a fairly good heating apparatus inside; that, in fact, so long as the patient's surface is kept warm it is of no consequence whatever whether the air he breathes, provided it be fresh, is at freezing point or the traditional 65°.

Dr. A. Ransome has done great service not only by his onslaught on "air sewage" but also by his coinage of the term. For a thoroughly good opprobrious epithet resembles a good wall-poster in its power of arresting and enchainning the attention of the many. It was long ago pointed out that certain constituents of expired air are intensely powerful nerve poisons. Whether sewer gas has been actually proved to contain similar toxins I am sorry to say I do not know, but having regard to its largely similar origin from decomposing proteid, though coming through a different channel, one can hardly doubt that it is so. These considerations should surely make us look on re-breathed air and sewer gas, not as mere carriers of accidental poisons, such as influenza and pneumonia and the like, but as *poisons per se*, and I wish to be allowed to record a few very imperfect observations made by myself during some years past chiefly on the subject of re-breathed air, with certain inferences which I think tend, however feebly and imperfectly, to show that the poisons we expire have *per se* very definite effects on tissue metabolism and need not a mere perfumatory admixture with fresh air but very large and very continuous dilution before they are rendered innocuous—that is to say, innocuous to *all*; for while some persons appear to be almost immune others seem intensely susceptible.

The first observation I will allude to was made in the autumn of 1896, in cool weather. I had to take a long night journey by rail after a long and hard day's work. The train was full and the compartment I entered was close, so, as I was tired and fagged, I sat in the corridor by an open window, well rugged up, throughout the journey. The compartment was completely shut off from the corridor by a glass door and windows, through which I could freely inspect its occupants. Two remarkably fresh-complexioned, wholesome-looking young fellows got into the compartment at York. They formed a remarkable contrast to the pallid and fagged-looking travellers already there. The windows and ventilators were carefully closed, and the new-comers, with the rest, settled off to sleep and slept soundly for nearly four hours, with the exception of a few minutes' interval at Grantham. When aroused on nearing London they, like the other occupants of the compartment, were haggard and leaden-hued, their fresh colour was entirely gone, and they looked and moved as if exhausted. I examined my own face in the lavatory mirror at the beginning and end of the journey and could see but little alteration in my colour, if anything it was rather improved by the end of the journey, and though I had slept little I was decidedly less tired than when I started. There had been but little smoking in the compartment, every one had slept too soundly. The gas lamp, I noticed, was so fitted that the products of combustion escaped directly into the outer air; the hot-air apparatus had not been started. It seemed to me that the change in the appearance of the two young fellows must be due entirely to the effects of re-breathed air. The inferences seemed to be these: the leaden grey hue was a mixture of pallor and blueness, pallor owing to contracted arterioles, blueness due to dilated venules, whether from peripheral vaso-motor changes primarily or from central changes beginning in the heart or lungs I cannot say, but I am inclined to believe peripheral, or why do so many people get clammy feet and hands in a close room? Carbonic acid may have had something to do with it—I think not much. The colour was more pale than blue—i.e., grey; and a similar though less marked change may be seen in the faces of some of the members of most congregations any Sunday towards the end of the service even though the air space is large enough to put carbonic acid poisoning out of court.

Dr. Lauder Brunton a good many years ago recorded a