as much as possible in the open air. Where conditions are bad, the disease can best be held in check by preventing accumulation of secretions. The child should be made to hang over the bedside every morning and evening so that the cavities may drain to the greatest advantage. The position alone is enough to start the cough. Since putrefaction of the sputum is one of the most distressing features, vigorous attempts at disinfection should be made. The methods are:

1. By enclosing the patient in a chamber saturated with the vapour of creosote or some similar disinfectant, for increasing periods of time.
2. Inhalation of disinfectants by the use of the Burney Yeo mask.
3. Intratracheal injections of disinfectants—for example, menthol and guaiacol in olive oil.
4. Administration of pulmonary disinfectants—for example, creosote and guaiacol—by the mouth.

Artificial pneumothorax has been suggested and occasionally tried for bronchiectasis, but it is rarely likely to be successful because, even if the attempt is made before fibrous pleural adhesions prevent collapse of the lung, it is obvious that just those parts which are meant to collapse—namely, the dilated bronchi—are least likely to do so; as they are supported by dense, inelastic layers of fibrous tissue.

"POLYCYTHAEMIA HYPERTONICA":

Is POLYCYTHAEMIA A SOMEWHAT FAVOURABLE SIGN IN HIGH BLOOD PRESSURE CASES?

BY

F. PARKES WEBER, M.D., F.R.C.P.

It has often been noted in typical cases of splenomegalic polycythaemia (Vaquez-Osler disease) that in spite of the extremely high so-called "blood viscosity" (due to the great excess of erythrocytes in the blood) the blood pressure is only slightly if at all above the normal, and the heart is scarcely if at all hypertrophied. Thus, in the first really complete *post-mortem* examination on a typical case¹ (a man, aged 58 years), though the erythrocytes numbered 9 to 11 millions to the cubic millimetre of blood, the heart weighed only 298 grams (10½ oz.). The blood pressure had been moderately above the normal. In many other cases the brachial systolic blood pressure has been only about 150 mm. of mercury. That there is a dilatation of the blood capillaries in such cases has been proved by the observations of Brown and Giffin,² and also by the measurements of Hisinger-Jägerskiöld.³ L. J. Del Baere⁴ points out that in polycythaemia it takes less blood to supply sufficient oxygen to the tissues than in anaemia. Therefore, though, owing to high blood viscosity, the blood pressure may be somewhat increased, the heart has less work to do than in anaemia, and consequently cardiac hypertrophy is not rarely absent in polycythaemia, even where the blood pressure is above the normal.

The so-called "polycythaemia hypertonica" without splenomegaly (or "hypertonia polycythaemica") to which F. Gaisböck drew special attention in 1904 and 1905,⁵ seems to me to be probably a secondary or symptomatic polycythaemia, connected in some way with the persistent high blood pressure of early stages of granular kidney, or with primary arterial hyperpiesia (using Sir Clifford Allbutt's term) without definite signs of renal disease. In other words, the condition is one of renal or primary arterial high blood pressure with secondary polycythaemia rubra. It is not a very rare syndrome, occurring chiefly in middle-aged persons, and probably more frequently in males; perhaps Hebrews are somewhat more often affected than others. From true splenomegalic polycythaemia or erythraemia (the Vaquez-Osler disease) it is distinguished by the absence of splenomegaly, by the higher blood pressure, and by the absence of such marked facial cyanosis as is seen in old-standing splenomegalic polycythaemia. Moreover, the syndrome may, I believe, represent merely a phase or episode in the course of a case of high blood pressure, the polycythaemia rubra disappearing after a time, though the high blood pressure persists or increases.

Thus in a nervously active Hebrew man, aged 59 years, who was first seen by me in 1920 (when he was 52 years of age),⁶ the brachial systolic blood pressure has been generally 180 to 210 mm. Hg. The blood count in June, 1920, gave 8,000,000 erythrocytes and 12,000 white cells to the cubic millimetre of blood, haemoglobin 130 per cent. Since then the blood count has varied considerably, the case tending to become one of arterial hyperpiesia without polycythaemia. He is thin rather than fat, and has a red face, with a little generalized rosacea, without cyanosis. Sometimes there is slight conjunctivitis, probably of rosaceous origin.* His complaints have been chiefly pains, probably of fibrositic nature, in one part or another. At present he has a little sanguineous mucous expectoration; there are no x-ray signs of any pulmonary tuberculosis.

His brachial blood pressure is now (June, 1927): systolic 205 mm. Hg, and diastolic 150 mm. Hg. A blood count gives: haemoglobin 90 per cent.; erythrocytes 5,100,000 per c.mm. of blood, white cells 6,200 (polymorphonuclear neutrophils 65 per cent., lymphocytes 27 per cent., monocytes 4 per cent., basophils 1 per cent., eosinophils 3 per cent.). The urine (which was formerly free from albumin) is now of specific gravity 1020, and rather high-coloured; it contains a little albumin but no tube casts; it is free from sugar and does not contain excess of urobilinogen. The heart is somewhat enlarged towards the left.

In spite of considerable business and other worries this patient's general condition has on the whole remained remarkably good, and he looks rather young for his age; but he now almost certainly has an early stage of granular kidney. This brings me to the question of polycythaemia being a somewhat favourable sign in cases of persistent high blood pressure and early granular kidney. I think it must be taken on the whole as of relatively favourable prognostic significance. The polycythaemia, as Del Baere (see above) points out, to some extent relieves the heart from overwork. In fact, I now regard cases of "polycythaemia hypertonica" or "hypertonia polycythaemica" as cases of primary arterial hyperpiesia or of persistent high blood pressure of early stages of granular kidney, in which, owing to a favourable (sometimes familial) constitutional "polycythaemic disposition," the patient's organism has succeeded in developing a secondary blood reaction—namely, the polycythaemia—which to some extent helps to mitigate or delay the harmful effects of persistent high blood pressure.

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DEATH BY ELECTROCUTION.

BY

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WE feel justified in submitting for publication the following details, as cases of electrocution are comparatively rare, and there is a paucity of information concerning them, in the books usually possessed by the general practitioner. This was stated at the time to be the first known recorded case of electrocution associated with broadcast reception.

The unfortunate lady was aged 61; she had been treated by one of us (E. E. J.) for some time for a chronic mitral lesion of the heart, but had been able to lead an active business life. She had gone to bed early, about 9.15 p.m., when she was last seen alive by her daughter. At 10 p.m. her daughter returned to wish her good-night, by way of

* With acne rosacea there is sometimes a kind of "rosaceous conjunctivitis," as some eye specialists have noticed. In regard to rosacea-like dermatoses affecting polycythaemic subjects, compare E. Pick and P. Kaznelson, *Derm. Woch.*, 1925, lxxx, p. 159; W. Richter, *ibid.*, 1925, lxxx, p. 1075; J. H. Sequeira, *Proc. Roy. Soc. Med.*, Section of Dermatology, 1917, x, p. 14.

her own communicating room. In this room she was astonished to hear her wireless head-phones emitting a loud noise, accompanied by flashing. Passing through to her mother's room, she found her lying motionless in bed, wearing head-phones, from which was coming a similar noise, and across her face electric sparks were playing, at the points of contact of her steel-rimmed spectacles. She threw the head-phones off, and tried to revive her mother. She was not successful, and sent for medical aid. On examination the mother was found to be dead. In her left hand, close to her side, she was grasping a brass electric standard lamp, of a rather cheap make. She was lying on her back; her appearance was peaceful, and there was no evidence of there having been a struggle. There was a burn of the fourth degree, about the size of a shilling, between the thumb and finger of the left hand. There were similar burns of lesser size on the face and scalp, corresponding to points of contact of spectacles and head-phones. These were over the left malar bone, nasal bones, both eyelids, and over the apex of the frontal bone, just within the scalp margin. This last was of the sixth degree, having, it was found later, charred the outer table of the skull. There was also a burn of the first degree over the left great trochanter. The lenses of the glasses were cracked, and there were discolorations of the metal work of the front head-phone band, and of the spectacles where they were in contact with the skin of the patient. It was stated that a few days before she had received a slight electric shock while holding the same hand-lamp, but had paid no special attention to this.

Nothing was disturbed until the following day, when we met the experts of the Electric Supply Company for the purpose of examining the various circuits concerned. We found a bare wire in the flex of the standard lamp, and this proved to be the cause of the short-circuit in the lighting circuit. Another bare wire was found in the telephone circuit, causing a short-circuit in this through the metal body and head-bands. Owing to the coincidence of these two defects existing in the two separate circuits, she had received the full volume of the lighting current through her body, entering from the hand-lamp and leaving by the earth connexion of the crystal receiving set. The current was stated to be alternating, of 50 cycles per second at 240 volts pressure.

In view of the connexion of the death with the fact that the victim was at the time listening to a wireless programme, we communicated with the British Broadcasting Company, explaining that we proposed to submit an account of the case to a medical journal, and asking for any comments. We received a very courteous reply, with permission to quote therefrom. The opinion expressed was to the effect that the chain of circumstances which brought about the death was so extraordinary that they would be extremely unlikely to recur; that it was the first case, so far as was known, of death associated with broadcast reception; that a similar catastrophe might have occurred had she been holding the defective lamp and touched an earthed conductor, such as a water-tap, or the metal work of a gas stove, or had been in a bath at the time; that it is generally assumed that 100 milliamperes is a fatal current for a human being, though this varies widely for different persons and for different parts of the body through which it passes; that the safest precaution against the recurrence of such an accident is to ensure that the wiring of electric fittings is satisfactory, and carried out by a competent electrician; that it would be impracticable to fit a fuse, as might be suggested, in the earth lead of a receiving set, as it is difficult to find a fuse which would "blow" with certainty at 50 milliamperes, and even if it were, the shock might prove fatal before the fuse had time to heat up and "blow."

Necropsy.

We wished to hold the *post-mortem* examination within twenty-four hours or less of death, but certain obstacles were encountered and the examination was not made until thirty-six hours after; this was unfortunate, as a number of changes which we might have thought at the time to have been due to the passage of electricity proved actually to have occurred after death. The blood was abnormally fluid, of a dark cherry-purple hue. All organs were intensely congested, and abnormally friable. Portions of the brain, liver, lungs, heart muscle, kidneys, left brachial artery, and plexus were submitted to Dr. A. D. Newcomb, patho-

logist to St. Mary's Hospital, who most kindly gave us a detailed report. The spleen was much enlarged, and the heart muscle, especially of the left ventricle, rather thin. There was evidence of long-standing mitral disease. There were no naked-eye changes in the aorta. We did not notice any changes in the muscles, such as the curious red lines, thought to be due to spasm of vessels; mentioned by Dr. Newcomb as having been recorded in such cases; this may have been due to lack of observation on our part. Microscopically, the brain showed *post-mortem* changes only, and no change was observed in nerves of the brachial plexus. The artery showed a moderate degree of fatty atheroma, and the lung oedema and congestion, with a moderate number of pigmented "heart-failure" cells. The left ventricle displayed a considerable degree of patchy fibrosis, probably from old rheumatic inflammation, with moderate fatty infiltration. The right ventricle showed fatty infiltration only; the liver fatty infiltration with moderate central congestion, and *post-mortem* changes were rather marked. The kidneys were congested, with slight ischaemic fibrosis and marked *post-mortem* change; the spleen was intensely congested. Conclusions: the appearances would all fall into line with other cases where the medulla was apparently incapacitated, and both heart and respiration stopped. The congestion was probably due to the old mitral lesion.

Finally, we desire to offer our best thanks to Dr. Newcomb for his invaluable help towards completing the investigation of this case; to Captain Eckersley, chief engineer of the British Broadcasting Company; and to Mr. Gregory, resident engineer of the North Metropolitan Electric Supply Company at Wembley, for the most useful information supplied towards the same end.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RUPTURE OF THE HEART.

I WAS recently asked by the coroner for East Lancashire to make a *post-mortem* examination of the body of a man, aged 72, who had been found dead in a water-closet two days previously.

The cause of death was a rupture of the anterior wall of the left ventricle half an inch in length. The tissue immediately surrounding the rupture was very friable and of a slate colour. The left coronary artery was calcified and blocked by an old clot. The aorta was normal. The gall bladder contained about a dozen stones. The right kidney was hypertrophied and had a small cyst on its anterior surface. The left testis was fibrocystic and almost the size of a Tangerine orange; the right testis was undescended. Both lungs were adherent, by old adhesions, at their apices. The right foot was in an extreme degree of talipes equinovarus.

As regards the predisposing cause of death, this case resembles the majority of those recorded in your issue of May 7th by Drs. Goodall and Weir; the age of the patient, the site of the rupture, and the calcification and blocking of the coronary arteries forming a close parallel. It is fair to assume that the exciting cause may have been straining at stool, and it is curious to note that three of the cases analysed by Drs. Goodall and Weir were found dead in lavatories.

Ramsbottom.

C. W. CRAWSHAW, M.B., D.P.H.

EXTENSIVE ADHESION OF THE TONGUE.

ANKYLOGLOSSIA, or adhesion of the tongue to its surroundings, is seldom met with in general practice, and the surgical literature on the subject is so scanty that the following details of two cases seem to be worthy of record.

The first patient, a woman, aged 48, was admitted to hospital for adhesion of the tongue to the lower lip, with consequent difficulty of mastication and speech. A few months previously she had been treated by a *hakim* with large doses of mercurials for eruptions on the body. This caused profuse salivation and swelling of the entire mouth cavity and the tongue. After a period the eruptions disappeared and the swelling subsided, but the tongue was left protruding, with its lower surface firmly attached to the upper margin of the lower lip, as well as to the cheeks. The lower teeth were completely hidden by the tongue, which could not be withdrawn, and the mouth was thus left open with the tongue firmly wedged in between the lips. She was kept at first on liquid food and given complete rest to restore her strength. Later, at an operation under chloroform anaesthesia, the tongue was carefully separated from the lower lip and the cheeks by cutting the adhesions, and the teeth, which were very dirty, were freed. The edges of the divided mucous membrane were brought together by means of fine silk sutures.