amounting only to 1.85 per cent. The oxygen was continued, and the next day the patient had the crisis.

CASE III.—*Acute Exacerbation of Chronic Bronchitis.*

This patient was suffering from an acute exacerbation of a chronic bronchitis associated with moderate cardiac failure. There was slight orthopnoea and cyanosis, with an irregular distribution. The hands and ears were purplish in hue, while the lips were only slightly so. The arterial blood was unsaturated with oxygen to 10 9 per cent. Two litres of oxygen a minute were administered by the Haldane apparatus during the next twelve hours, when the cyanosis had completely disappeared, and the orthopnoea was practically gone. The arterial blood at this time was unsaturated with oxygen to 3.01 per cent.

EFFECT OF OXYGEN INHALATION IN HEALTH.

The degree of unsaturation with oxygen of the arterial blood of five normal cases was determined. It was found to average 5.1 per cent., ranging from 4.4 per cent. to 5.6 per cent. It will be noticed that in the pathological cases outlined above the arterial blood oxygen unsaturation showed an appreciable decrease from normal when a sufficient oxygen concentration of the in-pired air was administered. Therefore it was considered of importance to determine whether the administration of oxygen would reduce the oxygen unsaturation of the arterial blood of a normal person. Arterial blood of a normal adult was examined and the oxygen unsaturation was found to be 4.4 per cent. Two litres of oxygen a minute were administered by the Haldane apparatus for 100 minutes and the arterial blood again tested for the arterial oxygen unsaturation, which was then found to be only 1.87 per cent. This confirmed the previous observations in the abnormal cases that the inhalation of inspired air sufficiently enriched with oxygen may diminish the oxygen unsaturation of arterial blood beyond the normal limits.

CONCLUSIONS.

1. In certain respiratory diseases where there is anoxaemia of the arterial blood the efficient administration of oxygen will diminish this anoxaemia and so relieve the cyanosis.

2. If the oxygen be given in sufficient concentration in the inspired air the arterial saturation with oxygen may be raised above normal.

3. This result may be obtained both in normal individuals and also in certain of those suffering from certain respiratory diseases.

REFERENCES.

[1] Stadie, *Journ. of Exper. Med.*, vol. xxx, No. 3, 215, 1919. [2] D. D. Van Slyke, *Journ. Biol. Chem.*, 1918, xxxiii, 147. [3] Haldane, BRITISH MEDICAL JOURNAL, July 19th, 1919. [4] Hürter, *Deutsch Arch. klin. Med.*, 1912, cviii. 1. [5] C. Lundsgaard, *Journ. Biol. Chem.*, 1918, xxxiii, 133; *Journ. Exper. Med.*, 1918, xxvii, 179, 219.

CUTANEOUS MANIFESTATIONS IN A CASE OF CERVICAL FISTULA.

BY

ALFRED EDDOWES, M.D., M.R.C.P.,

LONDON.

THE following case raises some points of general importance:

In September, 1919, Nurse M., aged 30, consulted me for loss of hair, and complained of being "run down." I found falling of the hair of the scalp and eyebrows and some loss of eyelashes. The skin generally was dry and rather scaly; the cheeks were not flushed, but the complexion was muddy and the face wanting in expression; the voice was normal. The front and sides of the neck, as well as a V-shaped exposed portion of skin over the sternum, were very red, suggesting at first sight sunburn, but on closer inspection the redness was seen to be due to dilated venules without heat, swelling, oedema, or pigmentation. On the right side above the head of the clavicle was a very white patch 2 in. in diameter and nearly circular; it resembled leucodermia, but there was no trace of excessive pigmentation at its margin as occurs in true leucodermia.

Below and internal to the centre of this white area was a round puckered patch of thin skin about 1.5 cm. in diameter, situated about 1.5 cm. above the head of the right clavicle and nearly 3 cm. from the middle line of the neck. On deglutition, this bit of overstretched skin was drawn in and formed a tubular dimple, half an inch deep. Several medical men had, the patient stated, seen it and been unable to explain it. Passing upwards, backwards, and inwards, I felt a firm round band apparently as large as a No. 2 gum-elastic catheter. She said she was liable to occasional regurgitation of matter into her mouth "like the discharge from a gumboil." The diagnosis was obvious—a pouch at the upper end of a cervical (branchial) fistula. She stated that her father told her that her "grandmother had something like it." I prescribed a lotion for the scalp, and internally iron and one grain of thyroid extract at bedtime.

When seen on November 17th she looked and said she felt much better, had found benefit quickly from the treatment and release from nursing a mental case. Her complexion was clear, colour good, and the hair had much improved. The redness of the neck had nearly gone, and there was now no contrast between white and red. The overstretched (often so-called atrophic) skin had become red, as if recovering normal nutrition. The round, firm, rod-like band was thinner and more distinctly fibrous. The dimpling on deglutition was not so marked, only a quarter of an inch.

A few years previously the patient had the appendix removed and after the operation was told that she had better never take another anaesthetic, as she had then taken it badly. Seven years ago she had "faintings and a suspicion of hyperthyroidism and mitral disease." She believes the cervical fistula discharged, until the age of ten years, through a little lump the size of half a pea. Sometimes, if she leans forward on a stiff collar, "a discharge is felt coming from the throat into the mouth." I think the right thyroid was more prominent than it was in September (two months earlier).

I do not think I ever met with such a change in nutrition before and in such a short time; the oddest point to me being the change found in the round ligamentous band and its attachment to the skin. Is Nature trying to absorb the band or reopen it as a sinus? It is so obvious that the patient, whose physique is otherwise good, is having her health ruined by the filthy pouch that I have passed her on to a surgeon's care.

The red area of skin on the sides and front of the neck, already referred to, was too peculiarly localized and delimited to be attributable solely to exposure to light and weather. It corresponds to the area of referred "choking pain" described by Head in connexion with the passage of an oesophageal bougie.[1] It is also a blushing area, as is well shown in some young women. That vasomotor pathological changes should take place there is not so surprising when we consider that it is probably at the "seaming-up of the segments" that such affections as linear naevi, ichthyosis hystrix, linear papillomata, and even occasionally lichen planus (in lines) occur. In one very rare case I have seen a line of lichen planus reached from the hip to the foot. No one nerve or blood vessel will account for such changes of distribution, but "the seaming-up of segments" and the closing of clefts during fetal life give a clue. During last year I called attention to a rare form of tuberculide, and suggested for it the clinically descriptive term "lichenoid." It closely imitates lichen planus and tends to develop in lines.

REFERENCE.

[1] *Brain*, 1893, vol. xvi, p. 1, and Fig. 12, p. 364.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUBCUTANEOUS RUPTURE OF THE SUBCLAVIAN ARTERY.

ON January 16th, 1918, a heavy, muscular man, aged 48, weir keeper at one of the up-river locks, was hurriedly pulling up one of the sluices during rising water when he suddenly felt a severe pain in the right arm and at once experienced considerable loss of power. There was no mark of injury and no swelling to be detected, but the whole hand and forearm felt cold, numb, and weak, and he had to stop work at once. Five weeks after the injury I found that the right arm was quite cold and pale. There was no muscular wasting, and all ordinary movements could be carried out with precision. No pulse at all could be detected anywhere in the arm from the axilla downwards, but the subclavian pulse was readily felt and appeared to be equal to that on the other side. No aneurysmal or other swelling could be detected, and, in fact, beyond the absence of pulse and the pallor and chilliness of the arm, nothing abnormal was to be found. There was no evidence of any cardio-vascular disease.

I saw the man again on May 4th, sixteen weeks after the injury, and by this time colour, warmth, and a good deal of power had returned. The right radial pulse had reappeared but was smaller than the left, and could not be traced up the arm beyond a point about one inch above the bend of the elbow.

I did not see him again until January, 1920, exactly two years after the injury, and the pulse by this time could be felt throughout the limb, but appeared to be weaker than on the other side from the middle of the brachial artery upwards. There was no sign of aneurysm and, in fact, the patient was normal in all respects, except that he found himself unable to use the arm in cold weather without discomfort.

The history of this case seems to make it quite clear that what occurred was a rupture of the subclavian artery at the point where it crosses the first rib, and from the absence of haematoma or other evidence of extravasation it seems probable that only the inner and middle coats of the vessel had suffered. The mechanism of the injury is probably explained by powerful muscular contraction bringing the clavicle into forcible contact with the first rib and so crushing the artery. I find, from experiments upon myself, that contraction of the shoulder muscles while in such an attitude as would be adopted in pulling up a heavy sluice gate does cause obliteration of the radial pulse. Whether this is a common phenomenon, or whether it is present only in those of a particular build or particular degree of muscular development, I am unable to say.

CECIL ROWNTREE, F.R.C.S.,
Surgeon to the Cancer Hospital and to the Dreadnought Hospital.

LOCALIZATION OF FOREIGN BODY.

IN the review of Captain Harold C. Gage's book in the BRITISH MEDICAL JOURNAL of January 31st, p. 154, it is said that the author had convinced himself "that the usual report from the radiographic department—that a foreign body was situated so many centimetres under a certain mark made on the skin—was insufficient for the operating surgeon."

But provided the mark on the skin is correctly made and the depth properly calculated by any method of localization, and provided an atlas of sectional anatomy of the body is at hand, there is a very simple method of conveying sufficient information in anatomical form to the operating surgeon. Suppose, for example, in the case of a chest the mark on the skin is made at the level of the eighth dorsal vertebra on the right side posteriorly 10 cm. from the middle line, and that the depth perpendicularly in therefrom is calculated to be 15 cm., and that the antero-posterior thickness of the chest at the level of the mark is 30 cm., then we have only to work out these data by simple proportion (the rule of three) on a drawing of the transverse section of the normal anatomy of the chest at the level of the eighth dorsal vertebra, on the same side in any reliable atlas of sectional anatomy. If the corresponding thickness of the chest at this level in the atlas is 7.5 cm., then the depth in from the surface point corresponding to the mark on the patient's skin becomes 3.75 cm. at a proportional distance from the middle line of 2.5 cm., and we can at once actually demonstrate to the surgeon in charge of the case the probable anatomical position of the foreign body in question, and its relation to the organs and tissues around, on the section as on a chart.

The atlas latterly supplied to the British *x*-ray departments in France unfortunately did not portray the limbs. The principles of what may be called the "trigraphic" method of localization could evidently be applied to all parts of the body in suitable (mostly quiescent) cases. The dimension in the patient chosen for comparison with the corresponding dimension in the chart might be thickness, or circumference, or the distance between recognizable prominences of bone.

This method had long been in my thoughts; I managed in the press of other duties to verify it in 1918 when abroad. It enables the radiographer to answer without mere guessing the oft-repeated questions: "Is the foreign body within or without the ribs?" "Is it below or superficial to the blade of the scapula?" and the like.

Bishopston, Bristol. W. COTTON, M.D.

Reports of Societies.

EYESIGHT OF MINERS.

A DISCUSSION on illumination in mines, with special reference to the eyesight of miners, arranged by the Illuminating Engineering Society and attended by many ophthalmic surgeons as well as mining representatives and lighting engineers, was held at the Royal Society of Arts on February 24th, with Mr. J. H. PARSONS in the chair.

The discussion was opened by Dr. T. LISTER LLEWELLYN, who, in dealing with the photometric values of the lighting in use to-day in mines, said that the lighting values were extremely low owing to two factors—first, the insufficiency of the light generated; secondly, very feeble illumination that entered the eye of the miner owing to the high proportion of light absorbed by the blackness of the coal face. These two conditions presented the problem to be overcome. Of the light given by a naked tallow candle about one-tenth reached the coal face, and one-tenth of this, or one-hundredth part of the original source of light, entered the miner's eye. In the safety-lamp mines only one-fiftieth of the value of the illuminant reached the coal face, and only one-five-hundredth part the eye of the miner. They needed to increase the value of the lighting in the safety-lamp mines five-fold, and then it would equal in value the light in the naked-light mines. He showed the various forms of light in use and compared their values and relative advantages. Of those shown, the best appeared to be of the head lamp variety. The electric battery was carried on the belt of the miner and the current carried by a flexible wire to the lamp fitted to the miner's cap. The lamp in this position gave a good field of light, close to the miner's work, and therefore in far greater power than was possible with a hand lamp, and, further, a light quite free from shadows. Calculating the injury and loss sustained by miner's nystagmus he showed that on pre-war values the economic loss to the country from this disease was at least £1,000,000 per annum.

Dr. H. S. ELWORTHY communicated some researches into the different values of light as affected by colour relief. The coal was nearly black, and there was a total absence of colour relief. He believed this of itself accounted for much eye fatigue. Whitewashing the posts and roofs of the workings would give much relief. Various tests which he described indicated that the rich yellow light with a tinge of red in it given by the oil lamp was a most comfortable light, but that in the bad air of a deep working this light became bluish. This blue light and the bad air were particularly irritating. Further observations indicated that there was more nystagmus in mines where the coal face was of a bluish tint—for example, in the steam coal mines.

Dr. J. S. HALDANE said that he did not think that the quality of the air in mines had much to do with nystagmus. The air on the coal face of a decently ventilated mine (and they were mostly so now) was very pure. He considered the disease was a local neurasthenia induced by the fatigue of trying to see in darkness. He instanced the analogy of certain respiratory troubles following gas injuries at the war.

Mr. ARMITAGE, a representative of a Yorkshire colliery company, said a prize of £1,000 was offered by the Government in 1911 for the best electric lamp; £600 was awarded to the C.E.A.G. lamp and smaller sums to others His company ordered 10,000 lamps; they had been working since then, and the facts obtained seemed to warrant a definite decision being arrived at. The use of the lamp was followed by (1) reduction of nystagmus, (2) fewer accidents, (3) quicker movement of the men from the pit bottom. The whole costs of their use for six years worked out at 1.29d. per shift—a very reasonable figure.

Dr. F. SHUFFLEBOTHAM commented on the great increase of interest in the disease shown in recent years. He thought Dr. Llewellyn underestimated the loss caused by the disease; the number of certified cases did not give the full tale. He considered it a general nervous disease and not an eye disease.

Mr. FUDGE, the secretary of the committee of inquiry now sitting, stated their chief object was the improvement of the miner's lamp, and he thought they were getting on.

so much anxious discussion. The whole conception of that measure was distasteful to him, running counter as it did to h s belief that the profession must remain master in its own house if it was to do its duty to the people. He never wavered in that belief and never worked under the Act.

His boyhood was spent in a remote Welsh valley with a trout stream at the bottom of the garth. His fishing hand never lost its cunning, and down to a few years ago he could charm trout to his fly on a day when others, accounted good fishermen, would go home with empty creels. His other recreation was literature; he was well read in Welsh, and his capacious memory held vast stores of the best of the Eng ish poets.

He was married but leaves no children. To his wife, the constant comrade of many years, the sympathy of many friends goes out.

DR. ROBERT J. BANNING, of Shoeburyness, who died on February 10th, was born in Liverpool in 1833. He received his medical education at the Liverpool Royal Infirmary, where he was a medallist and scholar, and at the Middlesex Hospital, taking the diploma of L.S.A. in 1854. He was a civil surgeon during the Crimean war, 1854–55, acted as surgeon on the Crimean transports, and saw fighting at Sebastopol. In 1857 he graduated M.D.St.Andrews, and in the following year took the diplomas of M.R.C.S., L.R.C.P. He began private practice at Gateshead in 1858, and subsequently removed to Shoeburyness, where he took great interest in local affairs, and held the post of medical referee under the Workmen's Compensation Act till May last. He was president of the West London Medico-Chirurgical Society in 1894–5.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Compulsory Greek.

THE statute modifying the regulations with regard to the Responsions Examination in respect of Greek was passed in Convocation on March 2nd by 434 votes to 359. The effect is that Greek is no longer a compulsory subject, except for candidates for classical and theological honours.

Medical News.

THE next Oxford Ophthalmological Congress will be held on July 15th and 16th. On the first day a discussion on perimetric methods will be opened by Dr. Luther C. Peter of Philadelphia. The Doyne lecture on "The nerve paths and centres concerned with sight" will be given on July 16th by Mr. F. Richardson Cross. Further particulars can be obtained from the honorary secretary, Mr. Bernard Cridland, Salisbury House, Wolverhampton.

A REPORT made by the honorary secretaries to the first general meeting of the Fellowship of Medicine and Post-Graduate Medical Association shows that altogether 663 graduates took advantage of the emergency courses instituted by the Fellowship of Medicine at the beginning of 1919, and continued to the present time. Of those attending 221 belonged to the United Kingdom, 215 to the Dominions, 30 to India, 179 to the United States, and 18 to the various European countries, Japan, and South America. The hope is entertained that one of the existing medical schools in London may become a graduate medical school, but it would be premature to make any announcement on this subject.

THE first number of the *British Journal of Experimental Pathology* has been issued. It is a quarto of seventy pages. The first paper is contributed from the Institute of Physiology, University College, London, by Professor W. M. Bayliss, who gives a negative answer to the question, Is haemolyzed blood toxic? His experiments lead him to the conclusion that the serious results of the transfusion of incompatible blood are not to be ascribed to the haemolysis as such, but are rather an aspect of the action of foreign serum-protein analogous to that responsible for anaphylactic shock. Other papers are contributed by Dr. James McIntosh and W. A. M. Smart on the determination of the reaction of bacteriological culture media, by Dr. H. MacLean and O. L. V. de Wesselow on the testing of renal efficiency, and by Dr. Cramer on hyperpyrexial heatstroke, to which we refer elsewhere more at length. In an appendix are some notes on laboratory methods.

THE annual meeting of the North-East Essex Division of the British Medical Association will be held at the Red Lion Hotel, Colchester, on Thursday next at 2.30 p.m.

AT the meeting of the Hunterian Society in the School of Oriental Languages, Finsbury Circus, E.C., on Wednesday next, at 9 p.m., papers will be read by Dr. Howard Humphris on "Modern physiotherapy," and by Mr. J. E. H. Roberts on "The treatment of septic fingers."

THE proposal to admit women to be Fellows of the Royal College of Surgeons of Edinburgh after examination, on the same conditions and with the same privileges as men, has been accepted.

AT the court of governors of the London Hospital on March 3rd it was decided to ask in-patients to pay 10s. a week towards the cost of their food; the alternative was said to be closure of one-half of the wards. The chairman, Lord Knutsford, urged that the proceeds of the Amusements Tax should be allotted to the hospitals.

VISCOUNT SANDHURST has accepted the presidency of the annual congress of the Royal Institute of Public Health to be held in the University of Brussels from May 19th to May 24th. The scientific work of the congress will be conducted in seven sections. The Harben lectures of the Institute will be delivered during the congress by Professor Maurice Nicolle of Paris.

SIR WILLIAM HALE-WHITE will open a discussion on idiosyncrasy to drugs at the meeting of the West London Medico-Chirurgical Society to be held at the West London Hospital, Hammersmith, this day (Friday, March 5th) at 8.30 p.m.

THE Home Secretary has appointed Dr. William C. Sullivan, medical superintendent of the State Criminal Lunatic Asylum, Rampton, to the post of medical superintendent of Broadmoor Asylum, vacant by the retirement of Sir John Baker, M.D. Dr. Sullivan was scientific adviser to the Central Control Board (Liquor Traffic) throughout the period of its existence. He has been associated with the prison medical service for many years, and is known for his authoritative writings on alcoholism.

THE Mayor of Kensington, Dr. A. J. Rice-Oxley, C.B.E., and Mrs. Rice-Oxley, held a very successful mayoral reception recently in the Kensington Town Hall. The function was attended by Princess Louise Duchess of Argyll, and Princess Beatrice, and a large number of his colleagues were present to support the first medical mayor of the royal borough.

AT a conference of medical superintendents of sanatoriums, training colonies, and hospitals for tuberculosis held in London on February 23rd it was decided to form a new society which should have as its aim the advancement of the standards and the improvement of the methods of administration, diagnosis, and treatment of tuberculosis in residential institutions. Membership was limited to medical men and women the chief part of whose duties lies in the medical charge of residential institutions mainly devoted to the treatment of tuberculosis. "Associate members" may be elected from among those who formerly held such posts, and from present junior officers of such institutions. The annual subscription was fixed at 10s. 6d. for members and 5s. for associate members. It is intended to hold quarterly meetings, and to circulate full reports of the conclusions and recommendations of the society and its committees. Dr. Jane Walker was elected president and Dr. James Watt secretary and treasurer.

THE full programme of the meeting of the International Society of Surgery, to be held in Paris on July 19th–23rd, has been issued. In the discussion on the surgery of the heart and great vessels M. Tuffier (Paris) will deal with the heart, M. Sencert (Strasbourg) with the great vessels, and M. Jembraux (Montpellier) with the transfusion of blood. The discussion on treatment of tumours by x rays and radium will be opened by M. Régaud of Paris, and Dr. N. S. Finzi of London. The discussion on analysis of the blood and biological reactions in surgical affections will be opened by Drs. A. Depage and Goovaerts of Brussels. In opening the discussion on fractures of the thigh Major Maurice Sinclair, C.M.G., D.S.O., R.A.M.C., will be associated with M. Patel of Lyons, and in that on the prophylaxis and treatment of tetanus Colonel Cummins, C.B., C.M.G., A.M.S., will be associated with M. Donati of Modena. Professor W. W. Keen of Philadelphia will preside over the meeting, and the names of American contributors to the discussions will be announced later. Particulars are also published of the visit to the battlefields after the congress; it will be made partly by train, partly by motor car. The first place visited will be Rheims, and the party will separate at Ostend seven days later.

A DEATH from lethargic encephalitis is reported from Donington, Lincolnshire. The patient was a young man who had been ill for ten days.