acetate of alumina prepared by mixing alum with acetate of lead in adequate proportions, to which a little aromatic water may be added, is advisable. The formula I am in the habit of using is—acetate of lead, 240 gr.; powdered alum, 330 gr.; distilled water, 16 oz.; aromatic or peppermint water, 8 oz. Dissolve the lead and alum salts separately in the water; mix and stir well together; either filter or let the precipitate settle, and decant the clear solution, to which add the aromatic or peppermint water. It may be used diluted with water if necessary, and the mouth is to be regularly rinsed out from the beginning of the treatment to the end ten or twelve times a day, or even more, and in urgent cases during the night. By so doing salivation is prevented, and if by any means it should occur its ill effects are counterbalanced by the use of the mouth-wash. I might here say that preparatory to any mercurial treatment, whether external or internal, it is always well for any old stumps of teeth to be extracted, particularly if they are in the habit of giving trouble.

(To be concluded.)

CASE OF LYMPHO-SARCOMA IN THE GROIN.

OPERATION; RETURN OF THE GROWTH.

By F. R. FAIRBANK, M.D., L.R.C.P. LOND.,
SURGEON, DONCASTER INFIRMARY;

AND

F. WALLIS, M.R.C.S. ENG.

THE case reported in THE LANCET of December 19th, 1885, from Westminster Hospital, as having been operated upon for recurrent lympho-sarcoma, is of sufficient interest to warrant a more detailed report of its earlier history.

For several years the patient had suffered from a small tumour in the right groin, below Poupart's ligament. This had given him no trouble, and he was advised by his then medical attendant to leave it alone. As it began to increase in size in the early part of the summer of last year, he sought Mr. Wallis's advice, who requested a consultation with Dr. Fairbank. On July 17th they together saw him. He was an emaciated young man, having an anxious look. He stated that during the last two months the tumour had increased rapidly in size. He had consulted a surgeon in the town where he had been staying, who offered the opinion that the tumour consisted of a hernia with a suppurating gland over it. Poultices were applied and an incision made, which gave vent to hæmorrhage, but nothing else. He then came under Mr. Wallis's care, who ordered ice to be applied locally until the consultation had been held. On examination a tumour was found in the right Scarpa's triangle, measuring about six inches in length by four inches in breadth. It was of the shape of the figure 8—two portions joined by a neck. The upper and deeper-seated portion was soft; the lower portion was firm and implicated the skin, which was of a deep red colour over it. The tumour was movable, and, with the exception of the skin over a part of it, was felt to be distinct from the surrounding tissues. The diagnosis was sarcoma, and immediate removal was recommended.

On July 21st, at his own home, in the presence of Mr. Wallis, Mr. J. Gelston, house-surgeon to the Doncaster Infirmary, and Mr. W. Nicholls, Dr. Fairbank removed the growth. Mr. Gelston administered the anæsthetic known by the letters A. C. E. A lozenge-shaped incision was made round the tumour, which enclosed the whole of the skin implicated. The tumour was found in the subcutaneous tissue, and entirely separate from the surrounding tissues, and external to the deep fascia. There was only one artery supplying it, and this was readily secured. The removal was very carefully and thoroughly carried out. The tumour weighed over 2 lb. When the operation was completed the patient fell into an alarming condition: breathing ceased, and the pulse was imperceptible at the wrist. Artificial respiration and faradisation were kept up for about two hours before he appeared out of danger.

The wound healed rapidly and well up to a certain point. In the centre, where there was the greatest tension, a part about the size of a florin remained open. The patient improved rapidly in general health, and was able to go away from home fourteen days after the operation. There was then no increase in the size of the wound, or any sign of

other tumour. About Aug. 22nd, while at Ripon, he noticed a fresh lump in the lower part of his body on the right side, and in consequence came home to see Mr. Wallis. When Mr. Wallis then saw him the wound was about the size of a crown-piece, with the edges irregular, thickened, and hardened. A small tumour, about the size of a pheasant's egg, was noticed above Poupart's ligament. The wound increased rapidly in size. On Oct. 1st another consultation was held. There was then an open wound over Scarpa's triangle, the size of the palm. The edges were indurated and undermined. The floor of the wound was clean and glazed. The femoral vessels were only thinly covered. There was a tumour above Poupart's ligament, the size of a small hen's egg. His general health was then good. Subsequently to this he went to Westminster Hospital, and the case terminated as reported in THE LANCET of Dec. 19th.

Portions of the tumour from Scarpa's triangle were forwarded to Dr. Ernest H. Jacob of Leeds, who has supplied the following report of his examination: "The growth was of varying consistency, from that of a normal lymph-gland to that of encephaloid softness. One portion was adherent to the skin. Microscopically, in some parts the growth was ordinary-looking lymphoid tissue, but there was a large amount in which the cell element was in excess, and presented the appearances of lympho-sarcoma rather than lymphoma simple. There were also signs of caseation and breaking down in the softer parts."

Mr. A. A. Bowlby, of St. Bartholomew's Hospital, also has sent the following report:—"Microscopic description of tumour: It is composed mainly of cells, which are larger, more irregular in outline, and more granular than ordinary lymphoid cells or leucocytes. Here and there a little fibrous stroma may be seen and a few bloodvessels. It is evidently a round-celled lympho-sarcoma."

The report of Mr. Walter Arthur deals chiefly with the condition of the nervous and circulatory systems. It would be very interesting to read what was the condition microscopically of the soft parts removed from Scarpa's triangle, and what was also the condition at the time of death. This case is interesting specially as showing that a comparatively innocent enlarged lymph gland may assume malignant characters of most virulent description.

Doncaster.

INHALATION IN PULMONARY DISEASES.¹

By W. H. BLENKINSOP, M.D., M.K.Q.C.P.

IN the treatment of pulmonary diseases our efforts, as I need only in passing observe, are directed more or less to a threefold method of cure—(1) by the administration of internal remedies, (2) by the employment of various external agents, and (3) by the introduction of medicated vapours into the air-passages by the process of inhalation. I am desirous here of drawing attention more particularly to the last-named method, the importance of which was recognised by the older physicians, and was developed early in the present century by Scudamore and others, who severally recommended the use of iodine, chlorine, and tar vapours. In whatever way we regard the action of this special mode of treatment, the fact remains that it is by far the most rational, possessing many obvious advantages over others, particularly in phthisis, and being capable of much further development. Notwithstanding the generally encouraging results, however, of this aid to our other methods, there are certain details connected with its employment which are somewhat indefinite at present, and upon which I think we require a distinctly pronounced expression of opinion. Let me for convenience' sake place my observations under the following headings.

First, I find it of service in speaking of inhalation—which will be further discussed as we proceed—to include within it two allied processes—viz., vaporisation, where hot air or steam is generated, and fumigation, where drugs or scents are volatilised. As regards the last-named process, we are sufficiently conscious of its potency in destroying noxious odours and germs in a sick room; but as to its effect upon the air-tubes of invalids suffering from pulmonary mischief, there is little aid that we can hope to gain from it. For example, if a specific action is required upon the lungs,

¹ Paper read before the Harveian Society, Jan. 7th, 1886.

the continuous saturation of the room with a *powerful* strength of vapour tends to produce headache and other nervous conditions in many patients, with derangements of the digestive organs; whilst the attendants also, whether nurses or relatives, are much inconvenienced by the surcharged atmosphere. Few can be found to tolerate this, notwithstanding there are some amongst us who are much in favour of the plan. If, on the other hand, the strength of a vapour is minimised, to prevent unfavourable consequences, we should find the process of cure somewhat indefinitely prolonged, if it ever occurred at all. In one word, therefore, fumigation may be regarded as a serviceable accessory, when reasonably employed, through its purifying action on the surrounding atmosphere, and possibly also by its invigorating effect upon the patient. Vaporisation of *dry air*, to which I shall again allude, is that method which proves so strikingly useful, and offers the greater advantage over steam, in acute cases, where the system is also undergoing other treatment.

Secondly, our subject leads us to inquire what affections of the respiratory organs have been found to be benefited by these auxiliary modes of treatment. Amongst the more acute may be named bronchitis, pneumonia, laryngitis, and croup; of chronic cases, phthisis in its various stages, chronic bronchitis, and pneumonia, and circumscribed gangrene of the lung; whilst of a somewhat mixed variety are to be reckoned whooping-cough, asthma, influenza, hay fever, and many throat affections, including diphtheria.

Thirdly, the point has been much argued, although it still appears to remain an open question, as to whether dry or moist vapours, medicated or otherwise, should be used, either in the usual process of inhalation or where a warm atmosphere is needed around a patient in an acute attack of illness. In speaking of *dry* medicated vapour in connexion with the former, I refer to that which results by volatilising powders or tinctures, or by burning medicinal herbs in a suitable apparatus and without the aid of steam. During a somewhat lengthened experience I have noticed the evil effects of moist vaporisation, excepting only, perhaps, in cases of laryngeal phthisis. The air-passages by this method are charged with an undue amount of aqueous vapour, which renders the mucous membrane so sodden that the calibre of the air-tubes is lessened and much urgent dyspnoea is the result. The tissues also become relaxed, the respiratory function is interfered with, and suppuration is encouraged. I am borne out in this opinion by two very able authorities among others—Mr. Hamilton of Liverpool and Dr. Coghill of Ventnor,—whose views upon the subject correspond very nearly with my own.

In croup and other acute cases, where the process of steaming is now for the most part adopted, for the purpose of warming the atmosphere, many of the drawbacks already referred to present themselves, recovery being in consequence retarded. The use of heated air, therefore, as I have already stated, is of far greater service and more to be depended upon. And here let me recommend a modification of Messrs. Allen and Son's portable hot-air bath, which has been very ably carried out under my directions. At the bottom of the dome of the apparatus a plate of talc is inserted and made completely air-tight—a hot-air chamber being thus constructed, to the entire exclusion of any products of combustion. On the front of the dome is a socket, into which a tube with a ventilator at the end fits. This inlet tube is sufficiently long to prevent any indraught of combustible material from the lamp through the perforations required for the circulation of air around the latter. The air, passing through the chamber referred to and funnel head and tubes attached, heats the atmosphere within a bed tent with dry vapour, and thus aids in relieving feverish symptoms, dyspnoea, and cough, both directly through the air-passages, and indirectly through the skin. The dry or Turkish bath has for years been recommended on these grounds for the relief of phthisis; cough, expectoration, and blood-spitting having been materially influenced by its use.

I have, next, much to say in connexion with the various inhalers which have hitherto been employed in the administration of medicated vapours. Many are based on wrong principles, none are entirely faultless, and a large number are positively useless. The majority demand forced instead of easy inspiration—a function not readily performed in health, much less in disease. The natural mode of respiration, moreover, solely through the nostrils, is perverted, and in a manner reversed; and patients are directed to go through the not very easy performance—which, happily

for themselves, they are as a rule unable to attempt—of drawing the medication into the mouth by a deep inspiration, and expiring it through the nostrils! Some of these inhalers generate moist vapour, to which I have already alluded. It is scarcely possible to determine in any what quantity of the prescribed material is absorbed, either on account of its dilution or loss into the surrounding air when used with steam, or in many instances by reason of its slight volatility when used on a sponge and attempted to be snuffed or gulped into the air-passages. In certain forms the medicated vapour is merely drawn into the mouth and puffed out again, as in smoking, without a particle ever finding its way even to the larger air-tubes. It is necessary that an inhaler should be as convenient and easy in its action as it is possible to contrive it for those whose respiratory functions have been enfeebled by illness; and that dry medicated vapour of known strength should at stated intervals be taken into the system, without any effort on the patient's part whatsoever, and in accordance with the natural method of respiration. For lack of an apparatus which should more or less fulfil the above requirements, and in the absence of sufficiently distinct ideas as to the most suitable remedies to be employed, we find that treatment by inhalation has in reality not advanced at the rate it should have done; whilst in many hands it has resulted altogether in failure. Dr. Burney Yeo, who recommends the *continuous* use of a special oro-nasal respirator inhaler, says, "we must not ask more of this method, or expect better results from it than it can possibly give." Now, as this has been less than I myself consider the system perfectly capable of performing, I find one more reason for repeating that it is still very imperfectly understood.

Of the various forms of inhalers in use it is necessary to allude briefly to a few typical examples in illustration of my remarks. 1. Maw's "improved" inhaler, the "Eclectic," Siegle's spray producer, and Dr. Lee's inhaler all generate warm, moist vapour. 2. The first two, with Dr. Coghill's apparatus and the chloride of ammonium inhaler, require forced inspiration and reversed respiration. 3. The ordinary valved mask inhaler, though based on a more rational principle, is in its present form a stifling apparatus, as anyone even in health may know who will give it a quarter of an hour's trial. 4. Dr. Burney Yeo's perforated-tin mask and Dr. W. Williams' wire and gauze mask, though very light and simple in use, allow of too much ventilation. It is a question whether in either case patients would be required to use the apparatus continuously, were it not for the too great dilution of the medication through the innumerable perforations of the metal on the one hand or the gauze on the other. 5. Siegle's spray producer requires much exertion in keeping the mouth continuously open, and is really more intended for throat cases. 6. In the chloride of ammonium inhalers the vapour which is drawn into the mouth practically seldom reaches the air-passages. Lastly, in all, the quantity of the remedy absorbed is quite uncertain, either in consequence of the dilution or the feebly volatile nature of many of the drugs prescribed for use. I may perhaps just add here that Dr. Yeo, in noticing Dr. Coghill's description of his respirator inhaler, remarks that the latter "does not cover the nose, but only the mouth, which is unadvisable, as the majority of persons breathe through the nose; and indeed it is desirable that they should do so. Dr. Coghill lays great stress on inspiring through the mouth and expiring through the nose, in order to secure a complete circulation of the medicated air. But this process would prove very tiring if attempted continuously." After a variety of experiments, I am able myself to offer an inhaler to the notice of the profession, which will, I trust, be found to remedy most of the drawbacks to which I have referred in connexion with those at present in use.

Briefly, my apparatus consists of two portions, connected by a flexible piece of tubing, as shown in the accompanying figure. A is an ordinary mask, with a communicating chamber beneath, containing sponge or felt. On each side are slits, in place of valved openings, and along the crest perforations for the escape of expired air. Elastic tapes worn round the ears or neck help to keep the mask over the nose and mouth. The vaporiser, B, about five inches in width, is in three sections, the lowest of which, c, contains a spirit lamp. Over this is the cover, b, surmounted by a chamber, which is used either as a receptacle for powders or for generating hot air, and is fitted at its base with a disc of talc. The two main segments are perforated for the admission of air in connexion with the lamp, whilst two curved

air-tubes communicate with the above-mentioned chamber.² Tinctures, when prescribed for inhalation, will be poured over the felt at the base of the mask. These will become volatilised by the hot vapour passing from the air-chamber of the vaporiser. When powders are used they will be placed in the hot air receptacle of the latter, to be there vaporised, the fumes being inhaled with ether, chloroform, or any tincture, if so desired. This apparatus is easily handled, and can be conveniently used in any position either on the table or on the lap.

Lastly, in reference to treatment, I have already said that in *acute* pulmonary affections the diffusion of heated air around the patient was all-sufficient when other methods of cure were being at the same time adopted. Fumigation may be had recourse to if it should be considered to be of any service; but inhalation proper would, I need scarcely observe, be inadmissible from the dyspnoea already present. Among *chronic* cases, phthisis, gangrene of the lung, and chronic bronchitis and pneumonia are all, under their various conditions, benefited by antiseptics, astringents, antispasmodics, sedatives, or stimulants, of which we have a long array. In the *mixed* varieties also many of the above are found to be extremely serviceable, particularly when used in combination with a heated dry atmosphere. Our object in general is to reduce inflammatory symptoms and allay irritation of the air-passages; to destroy or arrest activity in the specific organism present, as in phthisis; to promote a healthy condition of cavities; and prevent absorption of putrid secretions which are constantly exercising their baneful influence on the blood. These several conditions are readily met by suitable remedies taken directly into the respiratory organs, as well as by constitutional treatment. Inhalants are, like remedies administered by the mouth, best used in combination, for obvious reasons.

Many patients complain of a greater difficulty in coughing up phlegm after inhaling. This may be due to their continuing a habit which has become needless, or from a preternaturally dry condition of the air-tubes during convalescence, which soon, however, passes off. Most drugs in the Pharmacopœia can, with due precautions and a suitable apparatus, be inhaled with advantage. I am myself carrying on a series of experiments with the view of determining the exact doses to be used in all cases, and the time each inhalation should last with dry medicated vapour.

In Squire's fourth edition of the Pharmacopœias of the London Hospitals, upwards of fifty combinations may be found of drugs recommended for purposes of inhalation. The majority are used with *steam*, but although the quantity to be mixed with the latter is given, it is impossible to say how much is taken into the lungs. (This last could only be done by directing that inhalation should continue for a certain length of time, with a medium strength of solution at a given temperature.) It is necessary in every case, at starting, to begin with small doses, particularly when a drug is volatilised by dry heat. Thus, for instance, a strength of seven minims of dilute hydrocyanic acid would scarcely be prescribed in the latter case, although a teaspoonful, of a drachm to an ounce in strength, to a pint of water at 80° F., is recommended in the Pharmacopœia for each inhalation—whatever this may mean. It would be a long and suffocating process, for one thing, to attempt to take into the lungs the vapour of a whole pint of water. About one-half the dose administered by the mouth is generally a fair one to start with. Dr. Wagner, of Buda-Pesth, allows his patients to inhale until a burning sensation is produced in the chest, but I think it better to watch the effects in each case at starting, and then to prescribe accordingly. It

is useful for patients to inhale soon after rising, and also just before retiring to rest, as well as two or three times in the day, and at night if awake. Even with the dry process some substances take longer volatilising than others; it is needful, therefore, after prescribing a given strength of a drug, to regulate the heat of the vaporiser. Dr. Carrick Murray, of the Northern Counties Hospital for Diseases of the Chest, considers half an hour twice a day sufficient for the use of the inhaler, and also that twenty minims dropped on at once is sufficient for two days' use. How are we to reconcile this with the instructions of other authorities, say Dr. Coghill and Dr. B. Yeo—the former of whose respirator inhaler Dr. Murray was adopting—for the continuous use of their apparatus?

It would be impossible to enter into details here regarding every remedy found to be useful in pulmonary diseases; let it suffice therefore, in conclusion, to name merely a few. Carbolic acid, creasote, terebene, eucalyptus, thymol, pine oil, as well as iodine and iodoform, are amongst those most frequently used, either in combination with each other, or with antispasmodics, sedatives, &c. In Germany rabbits inoculated with tubercular matter were considered to have been kept free from tuberculosis by breathing an atmosphere saturated in benzoic acid. According to Dr. Cottreaux of Paris, chlorine gas is a specific for every form of phthisis. There are many cases in which sulphur medication has proved of great value, those engaged in the manufacture of sulphuric acid being also stated to be protected against phthisis. Dr. Jaccoud of Paris believes much in the curative effects of the pure creasote of the beech, and gives details of cases. Terebene and carbolic acid are also advantageously employed by the mouth to check intestinal infection from the sputa swallowed so frequently by patients, the lymph follicles of the intestines being so very prone to tubercular infection. Lastly, iodine proves most useful in the second stage of phthisis, and, with carbolic acid, in the purulent expectoration accompanying pneumonia; it has also a soothing effect when combined with ether.

CASE OF THORACIC ANEURYSM RELIEVED WITHOUT OPERATION.

By EVERARD HOME SAUNDERS, M.R.C.S., &c.,
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CASES of thoracic aneurysm so seldom being relieved by constitutional treatment or operative interference, the following, under observation here since January, 1885, which by the kind permission of Fleet-Surgeon D. O'Connor, M.D., R.N., I am able to forward, will doubtless prove of interest to the profession and worthy of record.

William F—, aged fifty-three; a naval pensioner, twenty-four years' service, the larger part of which was passed on foreign service; a widower; fair complexion, healthy appearance, of abstemious habits; good family history; has always enjoyed good health; no history of syphilis, gout, or rheumatism. Three years ago the man received the following injuries by a cart on which he was standing overturning, throwing its contents (a ton of copper sheeting) on him, and severely contusing the left hip, right shoulder, and chest, and fracturing the left tibia and fibula at the lower third. In January, 1885, he first commenced to complain of pain affecting the right lung at its apex, together with slight cough and bronchitic expectoration. These symptoms soon subsided, and he returned to duty, that of a labourer. In the following May he presented himself, suffering from laryngeal cough, giddiness in the head, and pain of a gnawing character through the right chest to the scapula, over the right shoulder-joint, and extending up the side of the neck, face, and right temple. He was unable to lie down or sleep on account of the pain, together with a feeling of impending suffocation, nor was he able to undergo the slightest exertion without discomfort. There was no complaint of dysphagia, no numbness or tingling sensations in the limb, no swelling or cedema of the right arm. He had never spat blood.

On examination there was found undue prominence over the right sterno-clavicular articulation; also dullness on percussion extending from the clavicle downwards to the upper border of the third rib, laterally from the left border of the sternum for a distance of two and a half inches

² Further details will be provided later on by the manufacturers.