the heart's action, thin walls, and degenerative changes. Sudden death at the time of operation, or soon after it, has to be reckoned with.

I have safely given bichloride of methylene to patients suffering from heart disease on many occasions; in dilatation and weakness of the organ, and in mitral change with hypertrophy. When there has been considerable distension of the right and left cavities of the heart from valvular defects I have never hesitated to use methylene if an operation has been urgent, even if the cardiac trouble has considerably impaired the pulmonary circulation. I am doubtful whether there is any other anæsthetic to supersede methylene in this condition. I have ascertained, before commencing the administration, that the heart was weak, or its valves damaged, and yet, in spite of this, the pulse has frequently improved in quality to the surprise of bystanders, and the patient has looked a far better colour at the close of a tedious operation than at the commencement. The bichloride has acted as a cardiac stimulant throughout. Exceptions are sometimes met with, and in these cases I invariably resort to brandy during the administration, never pushing the methylene to such an extent as to interfere with swallowing. I have given, during a long and desperate operation, as much as six ounces of brandy, and I am convinced that this precautionary measure has carried the patient safely through. I never trouble myself about the pulse; the countenance and the respiration are my guides. No hard-and-fast lines can be drawn. One patient can be sent into tranquil sleep with three drachms for half an hour, and a very exceptional case will require three times the quantity. Twelve drachms is the largest quantity I have ever given for an operation lasting one hour, and I have no remembrance of Sir Spencer Wells being a longer time than this over his worst operations.

I have known many cases of pleuritic effusion in ovarian disease, and when recent and serous I have advised the abdominal section before tapping the thorax, and in every such case where there has been enough breathing space left I have not been anxious. The effused fluid has disappeared from the chest without operative interference.

I have administered methylene with the best effects in cases of advanced phthisis with a large cavity in one lung, and softening going on in the other.

I do not think I have over-estimated the value of methylene, as in 1,230 cases I have not met with anything to alarm me. It is the most harmless of anæsthetics; it has never disappointed me, and I feel sure that those who will give it a fair trial will record a similar experience to my own.

It is not in healthy individuals that danger is to be apprehended from the employment of an anæsthetic. It is in the diseased and feeble, who have been reduced by pain, sleepless nights, and long suffering. In such cases as these Dr. Frederic Hewitt advocates the anhydrous ethylic ether, or the A. C. E. mixture. ("On the Production of Anæsthetic Sleep in Patients suffering from Grave Constitutional Disease," *The Lancet*, May 26th, 1888.)

Dr. Richardson introduced methylene bichloride in 1868-9, on a distinct principle—namely, that all the chloride anæsthetic series are excitants by reason of the chlorine. He therefore considered that by reducing the chlorine he reduced the danger. He used first methyl chloride (CH_3Cl); but, this being a gas, he found a difficulty in using it, because, unless it were given in the pure form from a large reservoir, when he found it a most perfect anæsthetic, it could only be given from a fluid in which it was condensed, and from which it escaped, producing extreme cold. He proceeded next to methylene bichloride (CH_2Cl_2), or one equivalent less of chlorine than chloroform (CHCl_3); and, after getting it in the pure state and inhaling it himself as a trial, he administered it successfully to a patient, Sir Spencer Wells being the operator. Dr. Richardson's argument has throughout been that methylene is safer than chloroform, because it is a lighter body, is more easily diffused, is more equable in action, and is less of an excitant. My experience confirms these conclusions to the letter.

ACUTE CIRCUMSCRIBED ŒDEMA.—Dr. Falcone (*Monat. f. Prakt. Derm.*, 1888, p. 291) relates a case of acute circumscribed œdema in which the patient's grandfather had suffered from a similar affection. Dr. Riehl (*Ibid.*, p. 444) relates a case in which the acute œdema formed behind the eyeball. The eyeball protruded and there was œdematous swelling of the eyelid and conjunctiva. The swelling lasted for twelve hours. There were two relapses. Meynert stated that a similar process of acute circumscribed œdema sometimes occurred in the brain, leading to death.

POST-NASAL GROWTHS AND THEIR RELATION TO DISEASES OF THE MIDDLE EAR.¹

By ADOLF BRONNER, M.D.,
Surgeon to the Bradford Eye and Ear Hospital.

MEYER, of Copenhagen, was one of the first to draw attention to the frequent occurrence and great importance of post-nasal growths (*Hospitals Tidende*, November 4th and 11th, 1867, and *Archiv für Ohrenheilkunde*, 1873). Several authors divide post-nasal growths into two diseases, that is, adenoid vegetations and hypertrophy of the pharyngeal tonsil. There does, however, not seem to be any physiological difference between the two affections. They are simply two forms of one disease, that is, local hypertrophy of the normal pharyngeal tonsil or retinoid tissue, situated at the vault of the naso-pharynx. If the hypertrophy is regular and lobular, it is called hypertrophy of the pharyngeal tonsil; if irregular, adenoid vegetations or lymphoid papillomata. Of course in many cases the surrounding retinoid tissue is also hypertrophied, but rarely to such an extent as to be of much importance. Many authors still seem to believe that the growths grow from the posterior wall and sides of the naso-pharynx. That this is not the case has been proved by the *post-mortem* examinations of Trautman, of Berlin (*Anatomische Pathologische und Klinische Studien über Hypertrophie der Rachen tonsille*).

The symptoms of post-nasal growths are very characteristic. The child (as children are mostly affected) is generally pale and weakly, with in-drawn thorax and pinched nose. It keeps its mouth open, more or less, which gives it a peculiar and stupid expression. The lips are swollen and thick; often also the eyelids. The child sleeps with its mouth open, and invariably snores at night. There is a peculiar nasal twang, very similar to the speech in paresis of the soft palate. The child cannot breathe through its nose, and is subject to attacks of bronchitis. In nearly every case there is distinct history of recurrent disease of the middle ear. The growths can be easily felt by introducing the finger behind the soft palate. They can in most cases be distinctly seen by anterior and posterior rhinoscopy.

The treatment of post-nasal growths can of course only be a local one. I now invariably remove them with the ring-shaped curette, as recommended by Hartman, of Berlin. It removes the growth very readily, the operation is not very painful, there is no danger of wounding any important structures, and, what seems to me to be of very great importance, the operation can be performed without an anæsthetic. The curette is similar in shape to the curette of Lang or Dalby, but the upper edge of the ring is flat instead of round (*vide* diagram).

The head and arms of the patient are firmly held by an assistant; the tongue is depressed, and the bent end of the curette is passed behind the soft palate. The flat end (a) is then pressed well against the vault of the naso-pharynx, and firmly drawn from one side to the other, thus cutting, or rather slicing, off the growths.

In many hospitals it still seems to be customary to use an anæsthetic when the growths are removed. By operating in the manner I have suggested an anæsthetic is hardly ever necessary, and the removal of post-nasal growths is reduced to a minor operation which can be undertaken at any time or at any place, without the slightest risk and in a very short time.

Post-nasal growths are to be met with mostly in children, and are undoubtedly much more common than is generally supposed. Meyer examined 2,000 school-children at Copenhagen, and found that 20, or 1 per cent., showed distinct symptoms of the growths. He also examined 700 children of the Orphanage at Haverstock Hill, and found that 13, or nearly 2 per cent., had post-nasal growths. Professor Doyen saw 4,000 children at

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¹ Abstract of Paper read before the Yorkshire Branch of the British Medical Association, at Leeds.

Leyden, and found that 5 per cent. showed the symptoms of the growths.

The great importance of post-nasal growths is their intimate relation to diseases of the throat and middle ear. Meyer examined 1,083 cases of deafness, and found 80 cases of post-nasal growths, or 7.5 per cent. Of 175 patients who had post-nasal growths, 130, or 70 per cent., were affected with diseases of the middle ear. Killian found that of the 712 cases who attended the ear clinic of Dr. Hartman in the half year 1886, there were 135 cases of post-nasal growths, nearly 20 per cent. Of these 135 cases, 101, or 75 per cent., had diseases of the middle ear. Of 242 children under 15 who had diseases of the middle ear, 90, or 40 per cent., had post-nasal growths. Schmiegelow reports that of 119 cases of post-nasal growths, 100, or 84 per cent., had diseases of the middle ear.

I have collected from private cases and cases under my care at the Bradford Eye and Ear Hospital 198 cases of diseases of the middle ear in children under 15, and found that of these 198 cases, 101, or over 50 per cent., had post-nasal growths. These were removed in 90 cases, thus clearing up all doubt as to the diagnosis. Of 152 cases of post-nasal growths, 125, or about 85 per cent., showed symptoms of past or present affections of the middle ear.

These facts will, I think, suffice to show how very important it is that in all children who suffer from recurrent or chronic diseases of the middle ear the naso-pharynx be carefully examined, and the growths, if there be any, removed. In adults other diseases of the naso-pharynx and also diseases of the nose become more frequent, and are in their way just as important for the treatment of diseases of the middle ear as post-nasal growths are in children.

RETINAL CHANGES IN BRIGHT'S DISEASE.

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IN Bright's disease, various forms of retinal change are met with. Dr. Gowers, in his *Medical Ophthalmoscopy*, enumerates (1) diffused opacity from oedema, (2) white patches, (3) hæmorrhages, (4) optic papillitis, (5) diffused retinitis, and (6) atrophic changes sequential to inflammation. Of these, the first form is common; the latter three, consisting of inflammatory changes and their consequences, are rare. In the condition ordinarily known as albuminuric retinitis, the appearances usually found are those of hæmorrhages, or of white patches in the form of radiating striæ, most numerous round the macula lutea.

The pathology of these changes, and their relation to the disease with which they are associated, is by no means clear. In the majority of cases the term albuminuric retinitis is a misnomer, for the condition of the retina is not one of inflammation. This is obvious, of course, in the case of hæmorrhages. The characteristic white patches when present might be the result of previous hæmorrhages, or of inflammation, or of simple degeneration. The microscopic examination usually, however, points to the latter origin. The patches are not found in the site of old hæmorrhages; they are not usually seen in the immediate neighbourhood of blood vessels, and they show at no stage of their existence any trace of blood pigment when examined either by the microscope or ophthalmoscope. Similarly, no traces of inflammatory action have been discovered in such patches. We must conclude, therefore, that they are from the first degenerative.

When we compare a number of cases of Bright's disease presenting such changes in the retina, it is not easy to find a common feature. The changes are most common in very chronic cases, and especially in cases of granular kidney, but the most varied features may be present. In some cases the ordinary name for the affection is a further misnomer, in that no albumen is present in the urine. I have one case under treatment at the present time in which albumen is found only in the urine passed after meals and exercise, and then in almost infinitesimal quantities; indeed, it can only be demonstrated by the magnesium-nitric test. On other cases, a very large amount of albumen may be present in the urine. Similarly other common features of Bright's disease may vary without any influence upon the retinal disorder. The one feature which I have observed to be common to cases of so-called albuminuric retinitis is an excessively high arterial tension. A

certain degree of increased tension is a normal, and one might almost say a healthy, condition in Bright's disease, and the aim of treatment in granular kidney should be to maintain such a degree of arterial tension as shall not pass, in either direction, beyond this normal. In cases where retinal changes are seen, the arterial tension will usually be found to be very high even for Bright's disease, provided that cardiac failure has not set in since the onset of the retinal affection. The relation of the high tension to the hæmorrhages is, of course, obvious. In any case of granular kidney the strain upon the vessels may be relieved by rupture, giving rise to hæmorrhage, possibly; the blood may be poured out in some comparatively safe part of the body, such as the nose, the lungs, or even the kidneys themselves, and the patient is often much relieved thereby; the hæmorrhage may, however, take place into the brain or retina, and cause serious mischief.

I am inclined to think that the degenerative patches also may be caused by the high arterial tension. We know that, associated with high arterial tension there is a deficient circulation through the smaller vessels. In Bright's disease the retinal arteries are commonly extremely small. Dr. Gowers mentions a case in which a reduction in size of the retinal vessels was observed to coincide with a marked increase in the tension of the pulse. The parts supplied by such abnormally small arteries must to a certain extent be deprived of nutriment. It must be remembered also that the whitish patches are commonly found in those parts of the retina which are comparatively remote from blood-vessels, and the most likely to suffer from deficient circulation. It may hence be reasonably deduced that the white degenerative patches are evidences of a deficient nutrition consequent upon disordered circulation.

Such a view explains certain other relationships of the retinal change. Thus, so-called albuminuric retinitis is very rare indeed in cases of amyloid kidney, and in this form of Bright's disease it is also rare to find either increased arterial tension or cardiac hypertrophy, unless the affection be complicated by granular change of the kidney. Again, the presence of retinal change is usually and rightly looked upon as increasing the gravity of the prognosis in Bright's disease, not only as regards the eyesight, but as regards the life of the patients. If, as I venture to propose, the retinal changes, whether hæmorrhagic or degenerative, are due to the increased arterial tension, and this is caused by the poisoned blood, it must be that the retinal change indicates a high degree of blood-disorder, and consequently a severe phase of the general disease. We have thus a reason for giving a grave prognosis.

In puerperal albuminuria the occurrence of retinal changes is not necessarily of unfavourable omen as regards the life of the patient, although possibly indicating a greater tendency to convulsions. The reason for this is clear, if the relation of retinal degeneration to the arterial tension is borne in mind. During the puerperal state the vascular system of the mother has to carry the excrementitious matter of two beings, herself and her child. The attempt on the part of the kidneys to remove such effete substances leads to their irritation, to the transudation of albuminous bodies, and sometimes to severe and permanent organic disease. The presence of the excrementitious matters in the blood causes also high arterial tension, and, according to the view put forward, may produce hæmorrhagic and degenerative changes in the retina. But when parturition has taken place, the cause alike of the albuminuria and of the high arterial tension is removed, and since the high tension constitutes the danger to life when retinal changes are present, it follows that when the high tension is removed the retinal change no longer justifies so gloomy a prognosis.

Further, the high arterial tension may be responsible for functional as well as organic retinal changes. Cases of albuminuric retinitis, when the high tension is combatted by rest in bed, calomel, and salines, frequently show a slight improvement of vision before any change can possibly have taken place in the organic lesions. I have no absolute evidence of this to give in the form of charts of the field of vision, but tested by ordinary clinical methods, such as by reading small print, distinguishing small objects, etc., the fact is often easily ascertainable. The result is probably due to the relief of the obstruction to the circulation, and the consequent better nutrition of the retinal tissue. It has its parallel in other functional disorders of the nervous system, such as hemianæsthesia and hemiparesis, which are found in Bright's disease accompanied by high arterial tension, and are relieved by similar means.