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Original Communications.

GLAUCOMA.*

BY V. H. MOORE, M.D., BROCKVILLE, ONT.

I desire to call your attention for a few moments to glaucoma, one of the most important and dangerous diseases of the eye. This disease very frequently comes under the observation and care of the general practitioner, and it is therefore as necessary for him to be able to diagnose a case of glaucoma as one of peritonitis or pneumonia. The diseases of the eye have been sadly neglected by the profession in Ontario. The teaching bodies place this subject upon the optional list, while the Medical Council do even a greater injustice, in that they ignore it entirely. Why a knowledge of the diseases of the uterus and its appendages should be held by these bodies to be a requisite (while one-half of the population have no such organs nor appendages), and diseases of the eye ignored, is a puzzle to me. I hold that a knowledge of the diseases of the eye is as important to the general practitioner as that of any other organ in the body, and therefore it should be given its proper place in the curriculum of medical studies. Is it not strange that for so many years we have neglected the eye and its ailments, and thus allowed so many of our fellow creatures to be clothed in darkness, shut out from the beauties of nature, the charm of color, the achievements of art, the joy of smile, and the faces of those they love? I might dilate upon this, but time will not permit on this occasion. Suffice it to say, that of all the special senses vision is the most dear, and therefore any knowledge that will restore or prolong it should be known by every medical practitioner. It is in consequence of this conviction that I have brought this subject before you to-day.

*Read before the Ontario Med. Association, June, 1889.

I have no hope of adding anything to the knowledge of the specialists, as few new facts of importance have been discovered of late, but I wish to emphasize some of the old truths, and show that this disease may be diagnosed, without a practical knowledge of the ophthalmoscope, with a degree of certainty calculated to do a vast amount of good and save scores of eyes. The general practitioner may by a little attention to the prominent symptoms be able to make an early diagnosis (the only one of value), and if he does not wish to operate himself, the case being a severe one, he will submit it at once to an oculist, before it is too late.

This disease is usually met with late in life. It is rarely seen before the thirtieth year and generally met with after the fiftieth. A large proportion of the eyes affected are hypermetropic. It is no respecter of persons nor constitutions; the rich and the poor, the strong and the weak are alike attacked. It makes itself manifest in various ways. We have it coming on so insidiously that the patient's attention may not be called to it until the vision is greatly impaired or irrecoverably lost. In this form there is no pain, no external evidence of inflammation, the eye appears healthy, the media is clear, cornea and iris normal, and the anterior chamber of proper depth. The pupil may be somewhat sluggish and slightly dilated, tension is increased and cupping of the disc will be found upon ophthalmoscopic examination. This would be called simple glaucoma by Donders, Mittendorf, Noyes, Fox and Bull, and chronic simple glaucoma by Juler and Swanzy. Such cases are the ones most likely to be overlooked by the general practitioner. But if he has educated his fingers to the tension of the normal eye, he will discover the increased intra-ocular tension (always a cause for alarm), and then look for a diminution of the field of vision, especially on the nasal side, rapidly increasing hypermetropia, anæsthesia of the cornea, gradual failure of central vision, sluggish and dilated pupil, and shallowness of the anterior chamber. Upon ophthalmoscopic examination decided cupping of the disc will be found, veins enlarged, arteries pulsating, especially upon slight pressure of the eye.

Again, we may have it coming on as acute inflammatory glaucoma, with or without a premonitory stage.

Usually the premonitory symptoms precede an acute attack and are as follows: rapid impairment of accommodation, with increasing presbyopia; rainbow-like rings around the gas or candle flame, a cloudy condition of sight which the patient will liken to looking through a fog or mist and momentary loss of vision. Should an acute attack now supervene we should find the following chain of symptoms: increased tension of the eye-ball, rapidly increasing presbyopia, congestion of the anterior ciliary veins (venous hyperæmia), marked arterial pulsation, cloudiness of the aqueous and vitreous humors, with opacities; pupil dilated, of oval shape and quite irresponsive to light, dimness of sight, contraction of the field of vision, shallowness of the anterior chamber, anæsthesia of the cornea and diminution of its lustre, giving it a steamy look, chemosis, epiphora, discoloration of the iris, intense pain, cupping of the disc, nausea and vomiting. These symptoms may pass off, leaving the eye with some defects of central vision, increased tension, and a sluggish and slightly dilated pupil; or they may return again and again, leaving the sight more impaired with each attack, until the vision is completely destroyed. These attacks have frequently been mistaken for neuralgia or stomachic trouble, and only discovered when too late to save the sight.

Acute inflammatory glaucoma usually comes on at night. Occasionally these symptoms come on without any premonitory stage and with such violence as to destroy the sight completely in a few hours. This form is known as glaucoma fulminans, so named by Von Graefe. This form requires prompt treatment.

Again, we have it coming on as chronic inflammatory glaucoma, in which the inflammatory process is similar to that of the acute, only less severe and slower in progress. It is often caused by excitement, mental anxiety or fatigue, excessive exercise or a full meal. It may come on insidiously, as chronic inflammation, recurring frequently, and gradually destroy the sight, or it may be ushered in as an acute attack, which gradually subsides into a chronic form. Acute attacks may develop at any time during the course of the chronic form, and keep on returning at intervals until an iridectomy has to be done for the preservation of sight and relief of pain. Chronic inflammatory glaucoma may lead to complete loss of sight

without any severe inflammation or acute pain, and this is the main characteristic between it and the acute form.

Secondary glaucoma is consequent upon some other disease already existing in the eye, such as intra-ocular tumors, staphyloma of the cornea or sclerotic, serous iritis, swelling of an injured lens, or dislocation of the same.

Hæmorrhagic glaucoma is produced by effusions of blood into the retina or optic nerve, and sometimes into the vitreous. These hæmorrhages are usually followed in a few weeks by increased intra-ocular tension and the development of acute or sub-acute glaucoma. The chief point of difference between this form and the ordinary, is, that loss of vision precedes by some time the actual onset of the inflammatory process. The symptoms are not constant, but subject to great variety. Usually only one eye is affected. There are no premonitory signs. The first symptom is sudden loss of sight. Noyes is of the opinion that in some cases at least, the cause is due to embolism of some of the retinal arteries, with consecutive hæmorrhages in consequence of an atheromatous condition of the vessels, rendering them unable to adjust themselves to the disturbances in the circulation.

This disease may be diagnosed from plastic cyclitis by the following symptoms: In plastic cyclitis we have a deep anterior chamber, deeper than normal and no increase of tension, while the eye is very sensitive to pressure over the ciliary region. From serous cyclitis by the increased depth of the anterior chamber, absence of pain, unless the tension is increased by hypersecretion of aqueous humor, when an examination of the field of vision will tell the tale, and by the appearance of a dust-like opacity in the anterior portion of the vitreous humor. From purulent cyclitis by the appearance of membranous opacities in the vitreous and hypopion in the anterior chamber. From iritis by the pericorneal injection, occlusion of the pupil, the presence of an inflammatory exudation in the iris, pupil and posterior surface of the cornea, posterior synechia, and increased depth of the anterior chamber, as seen in serous iritis, in which case the pupil may be dilated. The history of the case must be borne in mind as it is frequently due to rheumatism, gout or syphilis, and often is consequent

upon wounds of the cornea, lens or lens-capsule. The location of the pain will also serve as a guide, so will, too, the age of the patient, as it is usually found in middle-age, rarely in young children or persons advanced in years. From choroiditis, by the early appearance of floating opacities in the vitreous, the fact that myopes are often attacked, and that it usually follows debilitating diseases, such as small-pox, septicæmia, typhoid fever, etc., and occurs at all ages. It is often due to syphilis, rheumatism, gout and mechanical injuries. From papillitis by the normal condition of the tension, pupil and anterior chamber, the enlarged size of the blind-spot, while the vision may not be impaired, and the fact that both nerves are usually affected, and that the affection is generally due to intra-cranial disease such as cerebral tumor or abscess. From atrophy of the optic nerve, by the impaired color vision, at first having difficulty in recognizing green, then red, and next yellow. This progresses gradually until nothing is left in the field but blue. There is no pain nor unpleasant symptoms present except a delicate haze which appears to be spread over the sight, and which gradually increases. Both eyes are usually attacked, and the pupils may be contracted or dilated, depending upon the seat of the cause. If the lesion is in the brain the pupils will be dilated, if in the cord, contracted. Fifty per cent. of the cases of atrophy of the optic nerve are due to diseases of the brain or spinal-cord, and therefore we should look for signs of ataxy, knee reflex, etc. The symptoms of this affection are constant. Central vision is affected and grows worse as the disease advances. The ophthalmoscope will show the cupping of the disc peculiar to atrophy.

We now come to the consideration of the causes, and, as Noyes says, we here enter upon the field of speculation. That we have an increase of the intra-ocular fluids causing tension, I have no doubt, but just what causes or produces that increase is still an open question. We have nearly as many theories as authors, but those looked upon with most favor are hypersecretion and retention, the latter having the most adherents, although open to objection. Von Graefe believed the tension and disease were due to serous choroiditis; Donders, Hippel, Grünhagen to irritation of the fifth pair of nerves; Mauthner to some lesion of the optic nerve, and a peculiar form of choroiditis;

Jaeger to some primary optic nerve disease; Stellwag to rigidity of the sclera; Lange to disturbances of the circulation. Knies, of Vienna, and Weber, of Darmstadt, to adhesion of the periphery of the iris to the border of the sclero corneal junction. Weber believed that this was occasioned by swelling of the ciliary processes. Priestly Smith, of London, says it is due to narrowing of the circumlental space in consequence of the gradual enlargement of the lens, which takes place as we grow older. Noyes, like Priestly Smith, believes in the retention theory. Storting says it is due to strain upon the ciliary body which sets up an inflammatory process in the choroid, thereby blocking up the lymph streams about the venæ vorticosæ and thus lessening the circumlental space, which is followed by retention (same as from enlargement of the lens, according to Priestly Smith's theory), and consequent pushing forward of the lens-system and closing the canal of Schlemm. Schœn holds that the constant strain on the ciliary muscles while endeavoring to overcome the presbyopia creates irritation and causes thickening of the zonula and capsular leaflet, and finally the muscle weakens and the lens-system is pushed forward, closing up the excretory channels. Rheindorf has practically the same opinion. Brughsch thinks that a small cornea is a predisposing cause, and believes that to be the reason why the Semitic is more prone to this disease than any other race. He has carefully measured the corneas of a large number of Egyptians and found them smaller than those of the Anglo-Saxon race. He noticed that the artificial eyes sent from Europe were furnished with too large a cornea to correspond with the normal Egyptian eye. Schnabel condemns the whole pressure theory. Glaucoma is met with more frequently in Europe than America. It may be hereditary, and it may be brought on by certain exciting causes, as over-indulgence in stimulants, tobacco, and by excessive exercise, mental anxiety, injuries, etc.

The prognosis in this disease is unfavorable, as its tendency in all forms is to total loss of sight. It may be years creeping towards the dreadful end, or it may destroy the vision in a few hours. Sight may be lost for a time, during an acute attack, but after the subsidence of the inflammation it may return again, generally somewhat reduced in quantity. Both eyes will in time be affected.

The treatment of this disease is not satisfactory, as it rarely results in perfect recovery. Prior to 1857 (when Von Graefe discovered iridectomy), it was looked upon and justly so, as one of the most destructive diseases of the eye. Iridectomy lessens the tension, relieves the pain, and if done early will prevent injury to the optic nerve and save the sight. Delay is more than dangerous. Von Graefe says that after the third day the restitution is sometimes very imperfect. In glaucoma fulminans, a few hours' delay may result in complete blindness. This operation may be done in all forms and in all stages, excepting in simple glaucoma, when vision is gone and in the hæmorrhagic variety. Iridectomy gives the best results in acute and sub-acute cases. It does not always succeed in improving vision; sometimes it is worse after the operation, but it may be in a measure due to the large and irregular pupil and the astigmatism which may result. Sometimes the operation produces an attack in the other eye, but fortunately such cases are rare. I will not take up your time with a description of the operation, but pass on to the consideration of sclerotomy. This operation has some advantages over iridectomy, yet it will I think never supplant it. Sclerotomy is better suited for cases of simple glaucoma, especially when we wish to avoid the unpleasant dazzling effect of the broad new pupil, in cases where it is desirable to avoid disfiguring the eye, and in absolute glaucoma when we are operating for the relief of pain. It should not be attempted in cases where eserine will not produce well-marked myosis. Vaher reports six cases of progressive glaucoma unaffected by eserine or iridectomy, in five of which the pain and tension were relieved by posterior sclerotomy. Motais, as a last resort, has made a sub-conjunctival fistula in the posterior division of the eye, lessened the tension and so avoided enucleation. In many cases of simple glaucoma, paracentesis will be followed by good results, tension lessened, pain relieved and vision restored. Simi reduced the tension to normal by repeated punctures of the sclerotic, and completed the cure by an iridectomy. Eserine is a very valuable drug in this disease. It lessens the tension in many cases, relieves the pain and sometimes cures the attack. Knapp speaks of it in the highest terms. He says he has cured cases of glaucoma by instillations of eserine. He also

says when it produces incomplete myosis and fails to overcome the tension, that iridectomy should be done at once. It is used with very great benefit when we want to postpone an iridectomy, and often a judicious employment of this drug will render the operation unnecessary. Armaignac says he has reduced the tension permanently to the normal in acute glaucoma, by alternate instillations of eserine and cocaine. Quinine is spoken of as a remedy calculated to ward off an attack. Dr. Adamük reports a case in the practice of Iwanoff, where the premonitory symptoms were kept in abeyance for three years, by small doses of quinine daily. Mittendorf recommends it in large doses in the premonitory stage; he also speaks well of bromide of potassium. It is necessary for persons threatened or afflicted with this disease to look after their general health, avoid all excitement and violent exercise or anything that might have a tendency to increase the amount of blood in the eye. Keep the digestive tract in good condition, also the excretory organs active, go to bed early, keep the brain quiet, give the eyes complete rest, correct any error of refraction that may be present, avoid all medicines that have a tendency to dilate the pupil, and on no account suffer atropia to be put into the eye. This drug has been known to produce an attack of glaucoma. Stimulants should be avoided, and if taken at all only in small quantities. Any specific disease that might be present should be attended to, and when operating, the most careful attention should be paid to antiseptic precautions.

SOME CAUSES OF HEADACHE.*

BY G. STERLING RYERSON, M.D., C.M., L.R.C.S. EDIN.,
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No more familiar symptom is brought to the notice of the physician than that of headache, and when presenting the chronic form, none is more difficult to remove. Many of the sufferers from cephalalgia are told that it is "constitutional," and with this comforting assurance are condemned to life-long suffering. The researches of Day, Hughlings-Jackson, Tweedy and Anstie in England, of Erb in Germany and of Stevens in Ame-

* Read before the Ontario Medical Association, June, '89.

rica, have demonstrated the fact that a frequent cause of chronic headache is to be found in the mal-adjustment of the eyes.

I would briefly recall to your minds what constitutes hypermetropia. It will be remembered that in this condition the antero-posterior diameter of the eye is too short; consequently parallel rays entering the eye are focused *in front* of the retina. In order to bring them to a focus, a muscular effort of accommodation is necessary. In the higher degrees no effort of accommodation, no matter how great, can accomplish this. Consequently the poor hypermetropic starts life with a deficit and is obliged to draw upon his reserve of nerve force for the purposes of ordinary vision, where emmetropes (normal-eyed persons) use no accommodative effort.

In the case of astigmatism, where the parallel rays entering the eyes are focused differently in the vertical and horizontal meridians, there arises a constant visual perplexity; for while accommodation is adjusted for one part of the object, it is disarranged for another part.

In another class of cases, the extrinsic muscles of the eye do not work together harmoniously. There is a sort of family quarrel among the muscles—one set or more muscles working against the others—with consequent great discomfort to the owner of the warring members. The main difficulty is to maintain binocular vision, in other words, to keep the eyes parallel, so that rays shall be focused in eyes as not to cause double vision. It will thus be seen that the nerve centres are subjected to prolonged irritation, and it is not surprising to learn that they resent this kind of treatment and that the nerves cry aloud with pain, and that the whole head is sick and the heart is faint.

George T. Stevens submits the following proposition:—"Difficulties attending the functions of accommodation and of adjusting the eyes in the act of vision, or of irritations arising from the nerves—involved in these processes—are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency."

It will be noticed that other causes are not excluded and that it only claimed that mal-adjustment is a *most prolific source* of reflex and functional nervous disorders.

The form of headache most commonly met with

in connection with mal-adjustment of the eyes is characterized by pain in temples in supra-orbital and occipital regions and more rarely on the top of the head. It is paroxysmal, sometimes recurring with comparative regularity, but generally worse after anxiety, care, worry or excitement. In some cases pain is continuous, with occasional exacerbations. Besides pain in the head, there has been found habitual pain at the orifice of the trapezius muscle and at the lower angle of the scapulæ. These pains occur less frequently in men than in women. Men suffer more from occipital pain. Dyspepsia frequently accompanies the headaches, and may be explained on the principle of increased demand upon the nervous energies already exhausted by the ordinary requirements of the system. Insomnia is also a common accompaniment of these headaches.

Stevens goes so far as to state that errors of adjustment can cause epilepsy and chorea. But I am not in possession of facts under my own observation to justify me in going to this length. That headache is very frequently caused by eye defect I think will be admitted, when I state that during the examination of the sight of 4415 children in public schools in this city by Dr Gibb Wishart and myself, we found 408 children who were hypermetropes, and of these 192 admitted to suffering from headache after use of the eyes.

I will not weary you with any details of cases, but say that my object in preparing this paper is to simply draw renewed attention to the fact that errors of refraction and want of balance of the muscles of the eyes are prolific sources of headache and neurasthenia, and to suggest that in all cases of chronic headache the refraction should be tested and the muscular indices be determined, in order that the patient may be afforded every chance of escape from his ills.

ERGOT IN THE TREATMENT OF PNEUMONIA, WITH NOTES OF A CASE.

BY F. WINNETT, M.D., M.R.C.S., ENG., TORONTO.

Mr. W., a gentleman aged 39, of a florid complexion, weighing 240 pounds, was first seen at noon Jan. 8th, the second day of his illness. He was recovering from la grippe and had had pneumonia some years previously.

He presented the usual symptoms of lobar pneumonia with excessive congestion. The apex of the right lung alone escaped.

Jan. 8th, 1 p.m.—Temp. 103°, pulse 120 intermits, resp. 25; cough very troublesome, prevented him sleeping the previous night, great dyspnoea; sputa very copious, almost pure arterial blood. He was given ext. ergotæ fl. M. xv with tinct. opii M. v every two hours for four doses; the pulse to be carefully watched. Diet—milk and soda, beef tea.

Jan. 8th, 9.30 p.m.—Temp. 99°, pulse 113, resp. 20; breathes freely, cough not troublesome, sputa less copious and red. Directed medicine not to be given, unless primary symptoms recur; none was given.

Jan. 9th, 7 a.m.—Temp. 99½°, pulse 99, resp. 26; perspired freely, slept three and a half hours, expectoration scanty, cough a little troublesome.

Jan. 9th, 5.30 p.m.—Temp. 101½°, pulse 104, resp. 28; expectorated more freely, cough troublesome, sputa copious and red, dyspnoea marked, and cyanosis.

The ergot being again indicated, it was resumed. Sol. ergotinæ hyp. M. v was diluted with 25 minims of water and given in subcutaneous tissue of abdominal wall every four hours.

Tinct. digitalis and tinct. nux vom. of each M. 7½ was given at intervals of four hours, to stimulate the heart and counteract the weakening effects of the ergotine. Morphia gr. ¼ to be given at night when cough was troublesome.

10th, 7 a.m.—Temp. 100½°, pulse 96, resp. 25; not cyanosed, breathing easy, slept forty-five minutes, cough troublesome, sputa less bloody and better aerated. Turpentine inhalations ordered to be given frequently.

Lithia salicylate grs. xv directed to be given every four hours, as urine is scanty and severe pain is complained of in the lumbar region.

10th, 7.30 p.m.—Temp. 99½°, pulse 90, resp. 18; breathes very quietly, sputa less bloody.

11th, 7 a.m.—Temp. 98¾°, pulse 98, resp. 22; slept five and a half hours.

11th, 7 p.m.—Temp. 99°, pulse 100, resp. 20; sputa scanty and very slightly streaked with blood, copious evacuation of bowels with straining.

12th, 8.20 a.m.—Temp. 97¾°, pulse 88, resp. 24; at 4 a.m.—resp. 18, and the ergot being missed

the resp. went up to 24. At 8 a.m., ergotine was given and at 10 a.m., resp. down again to 20.

12th, 7 p.m.—Temp 98¾°, pulse 88, resp. 20; cough and sputa very little. Enjoyed a mutton chop for dinner.

14th, a.m.—Medicine discontinued.

15th.—No rales, pulse not intermitting.

16th.—Sat up in chair for two hours.

This case is interesting only in connection with the administration of ergot, of which I can find no mention in the regular text books of medicine or therapeutics. An article is to be found in the *Philadelphia Medical Register* of 1887, highly recommending it in certain cases of pneumonia. Its action in this case was almost instantaneous. Cause and effect following each other with such precision that little doubt could be entertained by the most sceptical.

A drug, the physiological action of which is conceded to induce a condition diametrically opposite to that found in pneumonia—dilated arterioles, capillary stasis and increased blood-pressure—must recommend itself in the treatment of that disease.

Selected Articles.

THE PRESENCE OF SUGAR IN THE URINE.

(Continued from February No.)

I will pass now to another somewhat new aspect of glycosuria. In the paper to which I have already referred I noted several cases in which glycosuria or, as it has been called, diabetes, preceded, or was preceded by, angina pectoris, and subsequently co-existed with it. Several cases of the same kind have since come under my knowledge. I will venture to detail one which was under my observation for some time.

A gentleman of the age of 62, consulted me in June, 1886, complaining, in the first place, of a cough which had been distressing him for six weeks. The cough did not appear to be due to any affection of the lungs, heart, or stomach, but rather was attributable to a deep dusky congestion of the throat, such as one often sees in gouty people. The patient was a man of singular refinement and delicacy, and at the same time of much acute sensitiveness and irritability. He had lost flesh, complained of low spirits, of much unfounded anxiety, and of serious want of sleep. His urine was at that time of specific gravity 1020

and while containing no albumen, gave a very decided reaction of sugar. I prescribed for him a careful diet, bromide of ammonium and codeia, but did not see him again till some weeks later, when he was the subject of a very sharp attack of quinsy—a typical gouty quinsy. During this attack the sugar disappeared entirely from the urine, but albumen made its appearance. After the attack the sugar returned, but in smaller quantity, and for a time his health improved; but in June, 1887, after an absence of several months, he came to me with new symptoms. They were, in the first place, symptoms of angina pectoris. He lived in a suburb from which a train took him to the city. To catch the train it was necessary that he should walk up a short acclivity beginning at his garden gate. Starting from home, shortly after breakfast, he was obliged, after walking a few yards, to stop and hold on by the palings, feeling, as he said, as if he were ready to die by reason of a strong sense of constriction of the chest, which seemed to be about to stop him altogether from breathing. After holding on for a few minutes he would recover his breath, and would generally be able to walk to the station. Sometimes, however, a second attack would intervene. At this time, although he had gained flesh, his general condition was a good deal worse than it had been a year before. His heart was now decidedly enlarged, and the enlargement appeared to be due chiefly to dilatation on both sides. The heart sounds were weak and obscure, and although I could detect no definite murmur I came to the conclusion that there was not only impaired nutrition of the muscular wall, but commencing valve disease. He was still suffering from much irritability and insomnia. The urine was now of specific gravity 1028, contained a little albumen, and gave a strong reaction of sugar. Rest, diet, and the use of strophanthus, in addition to codeia, brought about some improvement for a time. But three months later I was called, in great haste, to see him in consultation with his usual medical adviser. I found now that he had constantly recurring attacks of angina, by day and by night, altogether independent of muscular exertion. A careful examination led to the establishment of the diagnosis of sharp gastric catarrh. He had a foul tongue, thirst, frontal headache, nausea, occasional vomiting, and loss of appetite. The urine contained still a little albumen and much sugar. I advised careful evacuation of the bowels and the use of sedatives for the stomach in the form of carbonate of bismuth, with bicarbonate of potash and tincture of belladonna. But before these remedies could have time to operate, his sufferings increased to a terrible degree. His attacks of angina were almost continuous, and he had to sit night and day with his head supported on a rest in front of him. Under these circumstances, many remedies

were used by those in immediate charge of him. Nitro-glycerine and nitrite of amyl were of some use. For the insomnia various hypnotic remedies were applied. But it appeared to me that they were only of temporary value, and that the essential method of treatment was to overcome the gastric catarrh. It seemed that this definitely established condition was the abiding cause of the angina, so we resolutely attacked it with various remedies until it yielded. When it passed away, the angina gradually diminished, and the patient was able to leave his house and go to Margate, where he remained for some time in comparative comfort—until one day, moving suddenly from the breakfast table, he was seized with a fatal attack of angina. During all this illness, his urine was carefully examined. There were, indeed, difficulties in the way of estimating the quantity of urine passed daily: but the quantity of sugar in the specimens examined was always greater than it had been before.

I could cite some other cases, but will only say that the same kind of association has been more than once observed. Now, if we carefully consider what is called angina pectoris, I think we must admit that it is no more an essential disease than glycosuria; and, as I have seen it, and thought over it, I recognise in it, varieties of form and causation which run in curiously parallel lines with those of glycosuria. Every one, no doubt, must recognise the typical form of angina pectoris wherein degeneration of the heart muscle plays one part and arterial stress another; and everybody also will, I think, be ready to admit that disorder of innervation plays an important part in disturbing the balance between the heart and the arteries. Not improbably, indeed, this may be the first and common factor. In such a case as I have just described it looks very much as though disordered innervation was the starting point of the whole mischief.

If it were so, the position of the glycosuria has to be fixed. It might have been also a mark of disordered innervation. It certainly preceded heart and stomach disorder; and after being a herald of them, increased as they began and developed. But if the glycosuria were of hepatic origin, it seems to be necessary to admit that while there was undoubted tension of peripheral arteries in the limbs and head and neck, there must have been dilatation of the hepatic artery, or indeed some defect of digestion or of assimilation. It is impossible to eliminate entirely the last two causes, or to estimate their possible value. But comparing this with other cases, I cannot help cogitating in what ways disturbance of the arterial circulation of the liver may possibly occur in angina.

It is I think quite certain that excitements of the central nervous system may produce at one and the same time arterial relaxation in one part

of the body and arterial contraction in another. One often sees people who, under one or the other form of perturbing influence, become flushed and hot in the face and cold in the extremities, or hot in the extremities and cold in the face.

In such a case as that which I have quoted we might, on the other hand, recognise a perturbing nervous influence as a cause of peripheral arterial tension, of defective nutrition of the heart, of glycosuria, and probably of the faucial and gastric affection.

There is much reason in fact to look upon this as the best explanation of the whole array of phenomena. But in a preponderance of the cases presenting glycosuria together with symptoms of angina, the evidence of primary neurotic disturbance has not been so strong. In thinking over these I have been inclined to recur to a point shortly dealt with in the commencement of this paper, and to consider how far it might be possible that excessive tension of the arteries in one part of the body might be, so to speak, balanced by excessive blood pressure in arteries or other parts of the body. Surely this is what we, in a way, invoke when we attribute an internal inflammation to a chill of the external surface, or when we apply an irritant to the surface of the body in order to reduce inflammation in an internal organ. In addition we must not forget the reflex influence of one organ on another. Stomach disorder may have had its share in the production of the glycosuria, as it certainly had, in the case quoted, its share in the intensification of the angina. As one studies angina, one certainly finds that many apparently accessory conditions have to be dealt with in its treatment, notably for one, constipation.

All constipation is certainly attended with increase of arterial tension. In the treatment of angina I have found practically that the maintenance of a daily action of the bowels has been a need of the first importance, just as I have found that the avoidance of over-filling of the stomach, often resorted to where the patient is weak and failing, is imperatively necessary.

But I must not be diverted into a paper on angina, and I do not at the present propose to enter further into the relation of affections of the nervous system with glycosuria than has been dealt with in my former paper, and illustrated in this.

I have but one conjunction to put before you. A year or two ago one of my house-physicians, Mr. W. W. Ord, making thorough examination, according to rule, of a patient just admitted to St. Thomas's Hospital, found that her urine gave a strong reaction of sugar. She had been admitted for acute rheumatism, arising during lactation. Her child having been separated from her, it had been necessary to use applications to stop the flow of milk. The breasts had been strapped with belladonna plasters, and extract of belladonna had

been applied over the nipple areolæ. The examination of the urine was made within a few hours after the institution of this treatment, which evidently proved effective in staying the secretion of milk. After the detection of sugar, frequent examination of the urine was made. The sugar reaction turned out to be most marked in the beginning, and gradually diminished until at the end of three days it had entirely disappeared. Similar observations have been made in six cases—four in St. Thomas's Hospital, two at the Cane Hill Asylum. The chemical reactions obtained have appeared to correspond exactly with those which would be yielded by glucose, but their rapid evanescence has so far stood in the way of the obtaining any sufficient quantity of urine to afford opportunity of a complete investigation. The indication is, apparently, that the stoppage of the secretion of milk has determined a backward flow into the vessels of lactose in a quantity so large as to be represented by the appearance of a considerable quantity of glucose in the urine. That lactose introduced into the system as a constituent of milk through the stomach, not only acts as a diuretic, but gives rise to glycosuria is asserted by M. Germain Sée. About last midsummer my friend Dr. Keser was good enough to send me a copy of the *Semaine Médicale* of June 12th, containing a note on "Un Nouveau Médicament Diurétique dans les Maladies du Cœur, la Lactose."

I have since seen many references to this paper, which states that an enormous diuretic action is established by the use of 100 grammes of lactose (that is to say, the quantity contained in two litres of milk), while there is no certainty of obtaining this effect by four or five litres of milk. M. Sée goes on to say that while milk taken in large doses produces diuresis and a very marked glycosuria, large doses of lactose cause a remarkable polyuria, but no glycosuria. My house-physician's observation would appear to agree with this, so far as the suppression of lactation is concerned. The two sets of notes appear to confirm one another.

Both appear to me to suggest questions that should be carefully worked out. Why lactose given by itself should produce diuresis without glycosuria; why lactose given with other constituents of milk should give rise to both, while requiring a larger dose, is what at present I do not profess to understand.

M. Germain Sée believes that the sugar remains in the blood when lactose is administered pure. With all respect to him, I think that the whole conditions require further elucidation.

With this I conclude my paper this evening. I trust that you will understand that I have been, so to speak, talking from my notes, thinking of the many ways in which glycosuria presents itself as a symptom in various diseases and disorders,

and trying to find out what may be the instruction afforded in the several instances of sugar in the urine.

On the subject of treatment I do not propose to dwell to-night. If my views of the analysis of the causes of glycosuria are at all to be admitted, it must follow that the treatment of a subordinate glycosuria must be involved in the treatment of the major part of the case.

Not many years ago, when albumen was found in a patient's urine he was supposed to have Bright's disease. So now it is very often the practice to speak of the existence of a small quantity of sugar in the urine as justifying the use of the term diabetes. I think that those who have studied the question most thoroughly will agree with me that this is a most unwise use of the term; unwise as bearing alike upon prognosis and treatment.

Finally, I trust you will see that all I have put forward is rather analytical and suggestive than final or didactic. I wish to submit for your criticism, and to propose for your investigation, certain associations of glycosuria which have presented themselves to me, and to which I have devoted a good deal of thought.—Wm. M. Ord, M.D., F.R.C.P., in *Br. Med. Jour.*

REPORT OF THE SECOND HYDERABAD CHLOROFORM COMMISSION.

The experiments of the Committee were designed to show the effect upon the blood pressure, heart, and respiration of the inhalation of chloroform, ether, and the A. C. E. mixture, administered in various ways and under varying conditions. The objects of the Commission were five in number:—

I. To test the suitability and safety of chloroform as an anæsthetic. The experiments with ether and the A. C. E. mixture were instituted principally for the sake of comparison with chloroform on certain points, and it is not pretended that they afford a complete exposition of the action of those agents on the system.

II. The effect of pushing the above-named anæsthetics (*a*) to a dangerous degree, and more especially until the respiration ceases; (*b*) until death results.

III. The modifications in the effects of these anæsthetics which result from (*a*) asphyxia in varying degrees and produced by various means, (*b*) from the use of drugs such as morphine, atropine, physostigmine, and others.

IV. The reality or otherwise of the alleged liability during ordinary chloroform administration to the occurrence of primary or secondary syncope or stoppage of the heart, brought about either by shock or through fatty or weak heart, or by hæm-

orrhage, or by changes in the position of the body. To investigate these points, in the first place a large number of operations which are reported to be especially dangerous in reference to shock were performed in every stage of anæsthesia, and numerous experiments were also made to show the effect of direct irritation of the vagus. Secondly, a number of animals were dosed with phosphorus before they were experimented on. This caused weakening of the heart by fatty degeneration of its fibres, but at the same time other complicated changes in the whole of the organs of the body not met with in the condition known as fatty heart in human beings. On the other hand, there are conditions often met with in the fatty heart, such as changes of the coronary vessels, which were not produced by the phosphorus.

V. The effect of the anæsthetics above mentioned upon different animals, more especially upon monkeys, as the nearest approach to human beings.

The conclusions to which the Commission has been brought by the study of these experiments are the following:—

(1) Chloroform, when given continuously by any means which ensures its free dilution with air, causes a *gradual* fall in the mean blood pressure, provided the animal's respiration is not impeded in any way, and it continues to breathe quietly without struggling or involuntary holding of the breath—as almost always happens when the chloroform is sufficiently diluted. As this fall continues the animal first becomes insensible, then the respiration gradually ceases, and lastly the heart stops beating. If the chloroform is less diluted the fall is more rapid, but is always gradual, so long as the other conditions are maintained; and however concentrated the chloroform may be, it never causes sudden death from stoppage of the heart. The greater the degree of dilution the less rapid is the fall, until a degree of dilution is reached which no longer appreciably lowers the blood pressure or produces anæsthesia.

(2) If the inhalation is interrupted at any stage, the fall of pressure still continues at a rate which depends altogether on the rapidity of the fall while the chloroform was being inhaled. This after-fall is probably due to absorption of a portion of the residue of chloroform in the air passages after the stoppage of the inhalation. In this way it often happens, if chloroform is given rather freely, that, though the respiration may be going on when the chloroform is discontinued, it afterwards stops.

(3) If the administration of the chloroform is stopped at an early stage, the pressure very soon begins to rise again, and gradually becomes normal; but if the chloroform is pushed further, there comes a time, not easy to define, when the blood pressure and respiration will no longer be restored spontaneously, although the heart continues to beat after the inhalation is stopped.

(4) If the fall has been very gradual, it may occasionally happen that the respiration stops completely, and still the blood pressure rises again, the respiration recommencing spontaneously in the course of the rise. In the same way, when the inhalation has been discontinued, the respiration may stop during the after-fall of the blood pressure and begin again spontaneously. As a rule, if the respiration has stopped, or even becomes slow and feeble at the time when the inhalation is discontinued, and artificial respiration is not resorted to, the fall in blood pressure will continue until death ensues.

(5) There are two conditions which frequently disturb the gradual fall of the blood pressure—viz., struggling and holding the breath,—and it is only by great care that they can be avoided in animals.

(6) Struggling, independently of any change in the respiratory rhythm, appears generally to raise the blood pressure. In one case of a dog much weakened from phosphorus the pressure fell every time he struggled.

(7) When struggling is accompanied, as it often is, by acceleration of the respiration and pulse, especially if the respiration is deep and gasping, it leads to a more rapid inhalation of chloroform, and consequently to a more rapid fall of blood pressure and a greater after-fall. In order to keep the chloroform cap or inhaler in its place during the animal's struggles, the administrator is obliged to hold it down more tightly over the nose and mouth, and this materially assists in hastening the rapidity of the inhalation, and consequently of the fall in blood pressure.

(8) The effect of involuntarily holding the breath—which, as anybody can prove by experiment upon himself, must happen when an inhaler saturated with chloroform is first applied to the face—is much more remarkable, the pressure often falling with great suddenness, while the heart's action is markedly slowed. As soon as the animal draws breath again, the pressure rises as suddenly as it fell, but the gasping respiration which succeeds then causes very rapid inhalation of chloroform, with immediate insensibility and a rapid fall of blood pressure, which quickly becomes dangerous.

(9) The combination of struggling with alternate holding the breath and gasping, which results if chloroform is applied closely to the face without sufficient dilution with air, causes violent fluctuations, and then a speedy fall of the blood pressure, which very soon leads to a dangerous depression with deep insensibility and early stoppage of the respiration. The after-fall under these circumstances is rapid and prolonged. It is this combination of events which causes struggling animals to go under chloroform so quickly.

(10) The effect of holding the breath may occasionally cause a temporary fall of blood pressure

after the chloroform inhalation has been stopped, or even when the animal is quite out of chloroform. This fall is recovered from directly the animal breathes again.

(11) Slight continuous asphyxia, such as is produced by pressure on the neck by straps, a badly-fitting muzzle, or hindrance of the chest movements by the legs being too tightly bound down, gives rise to exaggerated and irregular oscillations of the blood pressure, and slowing and irregularity of the heart's action. If it leads to, or is accompanied by deep gasping inspiration, it is apt, like anything else which causes this, to increase the intake of chloroform and bring about a rapid decline of blood pressure.

(12) Complete or almost complete asphyxia, as by forcibly closing the nose and mouth or closing the tracheal tube after tracheotomy, has an effect similar to, but more marked than, that produced by holding the breath, and the character of the trace corresponds precisely to that produced by irritation of the peripheral end of the cut vagus. The pressure falls extremely rapidly, sometimes almost to zero, and the heart's action becomes excessively slow, or even stops for a few seconds. If the Fick trace of Experiment 148 be compared with the photographic reproduction of Trace A of the Glasgow Committee, it will be seen that they are identical, and that the slow action of the heart with great fall of pressure, which the Glasgow Committee attributed to some capricious action of chloroform upon the heart, was undoubtedly due to asphyxia.

(13) This effect of asphyxia is the result of stimulation of the vagi. The proof of this is (a) that the trace corresponds exactly, as stated above, to that produced by direct irritation of the vagus, (b) division of both vagi entirely abolishes it, and (c) the administration of atropine which paralyses the vagus also abolishes it.

(14) In Trace 158 (Fick 4), which was taken during asphyxia after a full dose of atropine, it will be seen that there is an alternately slow and rapid pulse according to the phase of the respiratory movement, but no continued slowing of the heart as in vagus irritation. But there was still a distinct fall of pressure after the atropine when the breath was held, and it was thought that the slowing of the pulse above noted in this condition might be due to the disturbance of the heart from tension in the pulmonary vessels in the absence of respiratory movement, rather than to irritation of the vagi. To test this point Experiment 184 was instituted. In this experiment the dog's chest was forcibly inflated with bellows connected by a tube with the trachea, and the effect of this proceeding was to cause a fall of pressure and slowing of the heart exactly the same as involuntary holding of the breath. The dog was then poisoned with atropine, after which inflation of the chest

still caused a fall of pressure, but without slowing of the heart. The fall of pressure must be in some degree independent of vagus irritation, which, however, usually accompanies it.

(15) It only remains to be considered whether the slow action or temporary stoppage of the heart with great fall of pressure produced by vagus irritation is in itself an element of danger in chloroform administration, and if it is not, wherein the danger actually lies.

(16) The experiments in which deliberate irritation of the vagi was carried on during anaesthesia show unmistakably that irritation of these nerves diminishes rather than enhances the danger of anaesthetics. The effect upon the heart is never continuous, and as the vagus becomes exhausted, or when the irritation is taken off, the blood pressure rises again, as it does when the same result is produced by asphyxia. The slowing of the heart and circulation which is produced by irritation of the vagus by any cause, such as holding the breath in chloroform administration, retards the absorption and conveyance of chloroform to the nerve centres, just as holding the breath, whether voluntary or involuntary, prevents chloroform from entering the lungs; and of itself slowing or temporary stoppage of the heart in chloroform administration is not dangerous.

(17) To answer the second part of the last question in Paragraph 15 is easy enough, if it is kept in mind that the effect of vagus irritation upon the heart is never continuous; and in chloroform administration, as the pressure rises again after the slowing of the heart and temporary fall of pressure produced by any form of asphyxia, violent respiratory efforts with bounding heart's action lead, as in the case of struggling, to a rapid and dangerous inhalation of chloroform, and consequent rapid and dangerous decline in blood pressure. It is, in fact, the temporary exhaustion of the vagi after stimulation that is to be feared, and not the actual stimulation as long as it is continued.

(18) In accordance with this fact, it will be found that in chloroform administration neither holding the breath, even if involuntary, or vagus inhibition can be kept up beyond a certain time; and if the chloroform is not removed from the face, one or both of two things may happen: (a) when the animal breathes again, it takes deep and gasping inspirations, the lungs become filled with chloroform, and an over-dose is taken in with extreme rapidity; or (b) when the restraining influence of the vagus is taken off the heart, through the irritation ceasing or the nerve becoming exhausted, the heart bounds on again, and the circulation is accelerated in proportion. The blood then becomes quickly saturated with chloroform, and an over-dose is at once conveyed to the nerve centres. The theory which has hitherto been accepted is that the danger in chloroform adminis-

tration consists in the slowing or stoppage of the heart by vagus inhibition. This is now shown to be absolutely incorrect. There is no doubt whatever that the controlling influence of the vagus on the heart is a safeguard, and that it is the exhaustion of the nerve which is dangerous.

(19) It can be readily understood how a condition in which the pulse is rapid and bounding, with high blood pressure, leads to more rapid absorption of chloroform from the lungs, and a more rapid propulsion of the chloroformed blood to the medulla oblongata, and consequently to a more rapid paralysis of the respiratory and vaso-motor centres and precipitous fall in the blood pressure. Such a condition is produced in some cases by ether or by division of both vagi or by a full dose of atropine. Not only is the poisoned blood carried more swiftly to the vital centres in these cases, but added to this there is the fact that, as the heart is already doing its utmost before the chloroform is given, it is unable to stave off by increased work the fall in pressure that occurs when the vaso-motor centre is paralysed. On the other hand, it seems clear from Experiment 92 that the direct action of chloroform upon the heart's substance is not the cause of the fall of pressure that occurs when it is inhaled.

(20) In Experiment 92 repeated injections of 20 minims of chloroform were made into the jugular vein, and its effect was not to paralyse the heart, but to produce anaesthesia and a gradual fall of blood pressure exactly as if the chloroform had been inhaled. In Experiment 72, after a considerable amount of ether had been injected into the jugular vein, and a bounding condition of pulse had been produced, the effect of injecting chloroform into the jugulars was much greater, and the fall of blood pressure much more rapid and dangerous, than in the case when chloroform alone was injected. Granting, then, the truth of Ringer's conclusions from experiments on the frog's heart (which have now been repeated and confirmed by the Commission) that chloroform has a gradual paralysing effect upon the heart's tissue, we must conclude that such an effect, in the degree in which alone it could occur in the practical inhalation of chloroform, would rather be a source of safety than of danger.

(21) The Committee discussed the advisability of cutting the vagi some time previously to experimenting on the blood pressure with chloroform. The effect of this procedure is to cause continuous rapid action and tendency to exhaustion of the heart, as well as to degeneration of the terminal branches of the nerves in the heart if the animal live sufficiently long. Such experiments might be of some interest theoretically, and also have had a practical bearing upon the condition of the heart in certain cases of chronic alcoholism; but the Committee decided not to perform them, as it con-

sidered the end to be gained did not justify the pain they would have inflicted.

(22) In experiment 178, the case of a dog that had had morphine, remarkable slowing and even temporary cessation of the heart's action occurred again and again at the same moment as the respiration stopped, but the heart invariably recovered itself, and began again to beat regularly before any steps were taken to restore the animal, and without any respiration occurring. We find in this case that it was possible to restore the animal even after unusually long intervals had been allowed to elapse between the cessation of the natural and the commencement of artificial respiration. The failure of the heart, if such it can be called, instead of being a danger to the animal, proved to be a positive safeguard, by preventing the absorption of the residual chloroform and its distribution through the system.

(23) The effect of artificial respiration after the natural respiration has ceased is to cause an alternate rise and fall of small amount in the blood pressure, the trace thus formed upon the drum being a coarse imitation, altered somewhat by the shaking of the table, of the natural respiratory cure. The difference consists chiefly in the fact that the artificial rise and fall are more abrupt than in natural breathing, and that the rise always coincides with expiration or compression of the chest. After artificial respiration has been continued for a certain time, the blood pressure begins to rise again, and a little later natural respiration returns.

(24) The effect of artificial respiration in restoring an animal after the respiration had stopped was always marked. In a few exceptional cases, such as experiment 159, a phosphorous dog, and Experiment 142, a horse which had an enormous over-dose, although the artificial respiration was commenced as soon as possible after the breathing was noticed to have stopped, it was not successful.

(25) Complete stoppage of the respiration always means that an over-dose has been administered, and the over-dose may have been so great as to produce a very prolonged after-fall of blood pressure, and may thus render restoration impossible. As it is impossible to say whether, after chloroform has been pushed and then discontinued, the respiration will be restored spontaneously or not, so it is never in any case certain that artificial respiration will restore the natural respiration and blood pressure, no matter how soon it is commenced after the respiration stops. A great deal depends upon the amount of the after-fall; in some cases, even after the respiration has been restored, the pressure continues to fall and respiration again ceases, and artificial respiration then fails. We thus find respiration restored by artificial respiration while chloroform is still being

absorbed, and this tends to show that artificial respiration does not merely pump the chloroform out of the blood, but exerts considerable influence in exciting the natural respiration.

(26) The time which elapses before artificial respiration succeeds in restoring natural respiration varies very greatly. In one case, Experiment 116, it was continued for eleven minutes before the first natural gasps commenced. This period is undoubtedly prolonged in some cases by a condition of physiological apnoea, which renders it unnecessary for the animal to breathe. Consequently, whenever the pressure rose considerably during artificial respiration it was stopped, and the animal then generally breathed after a few seconds.

(27) The time which may be allowed to pass with impunity before commencing artificial respiration also seems to vary considerably. This point was not particularly attended to in the manometer experiments except in Experiments 162 and 178, which were instituted to test the truth of the opinion formed by the sub-committee that morphine had some slight action in impairing the efficiency of artificial respiration. In these cases the commencement of artificial respiration was postponed for more than two minutes after respiration ceased, and was successful; but this is certainly far above the average interval that can be allowed with safety. The success of artificial respiration in restoring the blood pressure is in some cases very remarkable; *vide* especially Experiment 40, in which the heart had apparently ceased beating, and the dog was believed by everyone present to be dead, and yet recovered with artificial respiration. The success in this instance is due to the fact that chloroform had only been administered for a few seconds, and that the depression was the result, not of continuous chloroform administration until respiration ceased, but of a long and severe after-fall.

(28) It corresponds to those cases, which are so often reported, in which dangerous failure of the heart is said to have occurred some minutes after the administration of chloroform had been discontinued, and which are sometimes restored, and sometimes not, by artificial respiration. There is nothing at all sudden about the failure of the heart in these cases, but the attention of the chloroformist which has been wandering, is suddenly called to the fact that the patient is apparently dead. When the animal was really dead, it was found in some cases that artificial respiration still maintained a small amount of mean pressure in the manometer. In others the pressure seemed to fall to the zero line between each compression of the chest.

(29) The dangers of too vigorous artificial respiration were illustrated in some of the accidental deaths. In one case the liver was badly ruptured, and in another the pleural cavity was filled with

blood. In three cases—Experiments 80, 92, and 103—rhythmical movements of the diaphragm were noticed after the heart had ceased beating and after the chest had been opened. It is remarkable that in two of these cases the splanchnic nerve had been divided. The third was a case in which chloroform had been injected into the jugular vein, and in this case there was a synchronous movement of the jaw as well. In all, death and stoppage of the heart had occurred gradually, and in Experiment 103 the heart was still irritable. These movements cannot be called respiration; though the last gasp of a dying animal, that ineffective jerk of the diaphragm, which is such a fatal symptom, is very likely in many cases a movement of the same character. Similar movements, which were continued much longer, occurred in Experiment 104, after the thorax was opened, while the heart was still beating. Still more remarkable convulsions of the muscles of jaws, ears, and fore-feet occurred in Experiment 167, in the case of a dog that had been poisoned with nicotine. These movements continued at regular intervals for more than ten minutes after death, and were sufficiently forceable to jerk the handles of a pressure forceps fixed on the end of the tongue off the table at each spasm. In a rabbit, in Experiment 153, the auricles of the heart continued to beat rhythmically for three hours after it was supposed to be dead from chloroform and its thorax had been laid open. Irritability of the heart after death was noticed in many cases, but seemed to be most marked in cases where ether had been used.

(30) Chloroform injected into the heart through the jugular vein did not cause clotting of the blood, as was the case when ether was injected.

(31) In the course of the experiments of the Committee various drugs were administered in order to ascertain if they had any effect in modifying the action of chloroform. The result showed that none of them had any effect in preventing the typical descent of the blood pressure that occurs when chloroform is inhaled. Atropine, when given in a dose sufficient to paralyse the vagi, of course prevents the action of those nerves in asphyxia, and by increasing the action of the heart it appears to cause a more rapid descent in the blood pressure when chloroform is inhaled, as has been already explained. Morphine appeared in Experiment 162 to render the rise in blood pressure that occurred when the chloroform was discontinued slower and less complete, and to bring about a more or less permanent condition of anaesthesia. It may be noted that the animal used in this experiment was a monkey; and in other experiments with monkeys, when no morphine had been given, it was remarked that the animal, after a few inhalations of chloroform, would often lie quite quiet in a state of semi-in-

sensibility for a long time without further inhalations; still this condition was much more marked in Experiment 162 than in any of the others. No action of this kind was noticed in the dog in Experiment 178, but other experiments (90 and 94) showed that pariah dogs are very indifferent to action of morphine, and it is probable that the dose of morphine in this case was insufficient to bring about the condition noted in the monkey. The peculiar behavior of the heart in Experiment 178 was not the result of the previous administration of morphine, for a similar phenomenon had occurred in other cases (49 and 60) in which no morphine had been given. Experiments 162 and 178 prove conclusively that morphine has no effect in shortening the period that may be allowed to elapse between the cessation of natural respiration and the commencement of artificial respiration.

(32) The other drugs used had no effect upon the action of chloroform except when their own special action became the leading feature in the case—as, for instance, during the vomiting from apomorphine (Experiment 104, Fick 9) or the convulsions produced by nicotine (Experiment 167).

(33) In order to test the alleged danger from shock during chloroform administration, the Committee performed a very large number of those operations which are reputed to be particularly dangerous in this connection—such as extraction of teeth, evulsion of nails, section of the muscles of the eye, snipping of the skin of the anus, etc. In many cases the operation was performed when the animal was merely stupefied by the chloroform and not fully insensible. In such cases a slight variation in the blood pressure would sometimes occur, such as one would expect from the irritation of a sensory nerve or from the struggling that ensued, but in no case in any stage of anaesthesia was there anything even suggestive of syncope or failure of the heart's action. In thrusting a needle into the heart, there was often a momentary but well-marked fall of blood pressure; but even this was absent in all other injuries. If chloroform really had any power to increase the tendency to shock in operations, it is impossible to believe that it would not have been manifest, to some degree at least, in one or other of these numerous experiments. The Commission was, however, not content with this negative result, and determined to ascertain the effect of direct irritation of the vagi during continued chloroform administration. The result of such experiments (65, 117, and others) proved that inhibition of the heart's action prevented, rather than assisted, the fatal effects of prolonged chloroform inhalation. An animal that was put into a condition of extreme danger (from which it could only be restored by means of artificial respiration) by inhalation of chloroform for one minute recovered spontaneously and readily after five minutes of

chloroform inhalation, together with inhibition of the heart by electricial irritation of the vagus carried on simultaneously. In one of these experiments (117), chloroform was pushed for seven minutes; and during continued irritation of the vagus the animal repeatedly came round without artificial respiration. The danger really begins when the irritation is discontinued or fails to inhibit the heart, and thus enables the chloroform in the lungs to be rapidly absorbed and thrown into the system. The danger is certainly increased by deliberately pumping the chloroform into the lungs by means of artificial respiration, for animals in which this was done, although they showed a tendency to recover when the chloroform and irritation of the vagus were discontinued, afterwards died rapidly.—*Lancet*.

To be continued.

THE VALUE OF THE NEW ANTISEPTIC ARTIFICIAL MEMBRANA TYMPANI.

The following remarks are intended as a reply to the short criticism which appeared in this journal for November last.

During the past twelve months I have extensively employed in my aural practice the new antiseptic artificial membrane, with excellent results.

In many cases of chronic middle-ear disease marked improvement has followed its insertion into the meatus, but the most striking successes have always occurred in patients laboring under perforation of the membrana tympani. I have tested the value of my artificial drumhead in 130 cases of this disease, and, with only five or six exceptions, the results were extremely satisfactory. I have found it sometimes useful in cases of accommodative loss from alterations in the contents of the tympanum, in which the Eustachian tube was unobstructed and the naso-pharynx fairly healthy.

The immediate improvement in the hearing-power is often a matter of much satisfaction. The intensity of the sonorous vibration is at once increased, and sounds can be clearly defined which before appeared to be only confusion. The sensibility of the organ is magnified, and the sense of hearing is so much changed that the patient does not appear deaf during ordinary conversation. The hearing distance is remarkably increased, and, in place of earnest looks and strained attention, the countenance expresses both pleasure and repose. Several patients have informed me that, with the assistance of the artificial membrane, sounds had been rendered audible which they had lost for many years. Others laboring under perforation, but without serious deafness, have used them as ear protectors with great comfort. In such cases the artificial drum-head forms a screen

between the middle ear and external meatus, and acts as an efficient shield during exposure.

Sometimes good results can be obtained by simply adjusting the artificial membrane and replacing it as often as necessary. But, in a large majority of cases, perforation of the tympanic membrane is associated with chronic suppurative disease of the middle ear, so that other important remedial measures must be diligently practised, and the ear must always be thoroughly deodorized before the introduction of the artificial drumhead. I always tell my patients that they may hope for progressive improvement, but that they must not expect to realize the full amount of relief until they have regularly carried out the local treatment and worn the membrane for two or three months.

During the last half-century a large number of artificial drum-heads have been introduced by different surgeons, and probably all of them have been found more or less useful in suitable cases; but not one of these devices has obtained a wide and general adoption. The ordinary cotton pellet has been extensively recommended by aurists, but it is my experience that few patients can be induced to persevere with it, because it is so liable to get out of position, and requires so much dexterity in putting it in and taking it out of the meatus.

On the other hand, the new antiseptic artificial membrane presents many practical advantages.

1. It decidedly improves the hearing-power for distance and conversation, and this appears to be due, at least in some measure, to its peculiar shape.
2. It is especially adapted for self-application, and can be easily placed in the right position and readily removed.
3. It is extremely light, and causes no sensation or irritation in the meatus by its presence.
4. It is serviceable as an efficient ear-protector, and acts as a screen for maintaining the moisture of the exposed tympanic cavity.
5. It is manufactured in different sizes, to suit the varying capacity of the external ear, and when once placed in position it is not liable to displacement.
6. It is obtainable at a trifling cost, so that a new artificial membrane can be used as often as necessary.

The following table exhibits twelve cases of perforation of the membrana tympani treated with the new artificial membrane:

No. of case.	Age.	Sex.	Disease.	Before treatment.	Hearing : After treatment.
1. S. H. private patient.	16	F.	Perforation of both ears involving almost entire membranes ; discharge copious and fetid.	Very deaf, conversation difficult at one yard.	Progressive improvement ; conversation easy ; can follow sermon at church.
2. E. T. under care of Dr. J. Green, Sandport.	24	F.	Double perforation, caused by scarlet fever in early life ; discharge fetid but scanty.	Sense of hearing extremely deficient ; understands by lip movement.	No apparent deafness after two months' treatment ; musical sounds loud and clear.
3. R. E., a medical man.	36	M.	Perforation on right side ; no discharge for some years.	Hearing very deficient on right side.	Great improvement. Wrote in July, 1889, " my hearing is now restored."
4. K. P., Infirmary patient.	12	F.	Perforation of both membranes ; disease of ears followed typhoid fever three years since ; chronic naso-pharyngitis and fetid otorrhœa.	Mother states that she could only hear conversation in a loud tone, at the distance of one yard.	After treatment for <i>one month</i> , conversation easy ; can hear tick of clock and sermon at church.
5. M. S., Dr. Hunter, Gosport.	30	F.	Large perforation for many years followed scarlet fever ; otorrhœa profuse.	Deafness variable ; but always "very hard of hearing."	Ears deodorized and drums inserted ; can converse without difficulty ; seen after three months ; hearing much improved.
6. J. L., Dr. R. Emmett, Sandport.	44	F.	Perforation both membranes ; no discharge.	Very deaf twenty years.	Hearing much improved. Patient said ; " With drums I can hear well ; I change them twice a week."
7. N. T., Dr. Axford, Southsea.	24	F.	Extensive destruction of membranes ; fetid discharge and aural polypus.	Very deaf from twelve years of age.	Recently married, Oct. 1, 1889. Husband wrote : " I am delighted with the remarkable improvement in my wife's hearing."
8. L. S., Infirmary patient.	17	F.	Perforation both ears ; copious and fetid discharge.	Hearing very deficient for three years.	Very much improved ; can hear comfortably at church and in conversation.
9. E. G., Dr. R. Emmett, Sandport.	66	F.	Perforation of many years duration.	Very deaf ; had used ear trumpet for years.	Hearing much improved, has discarded the trumpet.
10. T. W., a medical man.	24	M.	Perforation of right entire membrane ; mastoid abscess ; six years since an operation for drainage followed by great relief.	Hearing very imperfect on right side.	Wrote Sept., 1889 : " I find great comfort from the artificial membrane and hearing much improved."
11. S. K., Dr. Woodward, Ryde.	22	F.	Perforation of both membranes since five years ; caused by scarlet fever ; very fetid discharge.	Very deaf ; conversation difficult at one yard.	Conservation easy. She said, Nov. 1st, 1889 : " The membranes are a very great help and keep out the cold air."
12. S. F., (private patient), Gosport.	74	M.	Large posterior perforation, right membrane ; left membrane white and puckered ; no discharge.	Lost hearing on right side for many years ; left very imperfect.*	Immediate improvement by insertion of artificial membrane. Nov. 10, 1889, stated : " My right ear is now very useful, and my hearing much improved."

*Patients have often told me that they had lost all sense of hearing on the side of the perforation, and have expressed surprise at the effect of the artificial tympanic membrane.

A FEW PRACTICAL REMARKS ON CONTINUED SLIGHT FEVER.

The use of the clinical thermometer in acute disease is universal, and the value of its indications for diagnosis, prognosis, and treatment is universally appreciated. But there is reason to think that in chronic disease its use is far from being as general as it should be. Reference is not made now to cases which are accompanied by marked pyrexia, such as those of phthisis, where of course the thermometer is daily used by all.

There are many cases of failure of general health attended with decided weakness and gradual loss of flesh and color, but without sufficiently marked local symptoms or evident febrile action to justify the considerable disturbance of general health. Such cases naturally give rise to the suspicion of some incipient, deep-seated organic disease. In many of them it will be found that the temperature, taken at various times in the day, exhibits abnormalities, showing that there is a slight febrile action which contributes largely to the injurious effects upon the general health. The only local symptoms to be detected in such cases may be a slight looseness of the bowels, due to some limited intestinal catarrh; or a slight local tenderness scarcely complained of by the patient, due to some local congestion or irritation. Or, again, there may be only vague pains which suggest a rheumatic element.

For instance, I was consulted last winter by a gentleman, 62 years of age, who had been for five months gradually losing strength and flesh despite careful treatment by a skilful physician. There was marked rapidity of heart action, the pulse constantly being 100 or upward. I found that his temperature rose at some part of each day from $99\frac{3}{8}^{\circ}$ to $100\frac{3}{8}^{\circ}$, and, on inquiry, learned, that each day for a year there had been semi-solid or even less consistent evacuations, at times amounting to two or three in the course of the day, a condition of things which he viewed with great complacency, and had never complained of to his physician. He was a very active business man, taking a great deal of exercise, and exposing himself considerably in driving about. The recognition of this febrile element, evidently symptomatic of an intestinal catarrh, which in his overtaxed and sensitive state of health induced the slight fever, led me to confine him to bed, and to restrict his diet, and to use remedies directed to the relief of the intestinal condition. He took for some time a pill of nitrate of silver gr. $\frac{1}{5}$, and extract of opium gr. $\frac{1}{10}$, thrice daily, with an injection of sulphate of zinc gr. $\frac{1}{2}$, in an ounce of water, and with the addition of deodorized laudanum, from 5 to 12 drops, according to the degree of looseness shown by the first movement in the morning. Improve-

ment gradually followed, the temperature after some weeks descended to normal, and the pulse-rate came down with it, and he has regained good health.

In another case which I have just seen, a young man of 35, has for six or seven years been in poor health, obliging him to spend the winters in Florida, and to abandon his profitable business in the West. His habits are rigidly careful and proper. He has been repeatedly examined by various physicians without any sufficient cause being detected for the weakness and loss of flesh; he formerly weighed 155 pounds, his present weight is 131 pounds. At no time has any lesion of the lungs been found, nor has there been any cough, though naturally fears of incipient disease have been entertained. The circulation has been constantly excited, the heart's action easily accelerated, and some shortness of breath produced by exertion. He has already noticed that on some occasions he would have sub-normal temperature in the evening. I found his morning temperature $99\frac{3}{8}^{\circ}$ to $99\frac{4}{8}^{\circ}$; at 2 p.m., $99\frac{3}{8}^{\circ}$ to 100° ; at 7, 8, 9 and 10 p.m., $97\frac{3}{8}^{\circ}$ to $97\frac{3}{8}^{\circ}$. It was manifest that this was an abnormally wide range of temperature, with a maximum, it is true, not very much above the normal, but still, when taken in connection with the sub-normal minimum, showing a distinct, though slight febrile movement. Careful examination of every organ revealed nothing abnormal until the region of the gall bladder was reached. Here there was tenderness and circumscribed dulness on percussion, probably showing distention of the gall bladder, and a catarrhal state of the gall ducts and duodenum. There can, I think, be little doubt, that this irritative condition has been maintained for a long time, and having been associated with a slow pyrexia, has gradually produced the serious effects upon his general health above described. It is difficult to say why, in some cases, such slight lesions induce fever, when, in many instances, this would be entirely wanting. There must be a wide difference in the susceptibility of individuals to febrile action, due possibly either to the different degrees of facility with which their vital chemistry is disturbed, and irritating ptomaine are developed, or with which irritating organisms of substances from without gain entrance in spite of the resisting power of their protoplasm.

Another interesting case presented itself at the University Hospital a few days ago in the person of a man aged 40, who had been a hard drinker, and of course, much and often exposed. He complained of weakness, was easily put out of breath, and had pains about the left shoulder, scapula, and pectoral region. The bowels were disposed to be loose. The temperature was 100° at noon. Of course the suspicion of a walking case of typhoid fever was entertained, but careful examination showed no

confirmatory symptoms. The condition had then lasted apparently for six weeks, and a week later when he returned, his digestion was in much better condition; there were still pains about the left shoulder, with stiffness of that joint, and his temperature was $100,1_0^{\circ}$. A week later, he returned relieved of the pains, with his digestion in good condition, but still with a temperature of $100,5_0^{\circ}$. The circulation throughout had been excited, and during my examination the pulse was quick and irritable, and from 124 to 130 to the minute; the radials felt somewhat hard; the first sound of the heart was somewhat blurred, but without distinct murmur. The result of a careful examination of all other parts of the body was negative, as throwing light on the cause of fever. It seems highly probable that in this case an irritative action which may possibly be called rheumatoid in type, has been affecting the fibrous tissues, but I suspect especially involving the walls of the vessels, that a diffuse endarteritis is threatened. We know how frequently arterial changes develop gradually in those subjected to such causes as this man has been, and we constantly recognize the lesions when they have advanced to a high degree, and when of course they are irremediable. But there is an incipient-forming stage, when the vascular changes are neither extensive nor profound. They are not yet associated with those secondary degenerative changes of sclerotic type which we later recognize, not only in the vessels, but equally in the cardiac walls and in the kidneys. It is true that the diagnosis is based chiefly upon exclusion and upon presumptive evidence. When, however, there are such symptoms as were present in this case—slight continuous elevation of temperature, disproportionate excitement of the circulation; alteration in vascular tension; fugitive and radiating pains; weakness; dyspnoea on effort; occurring in a patient of gouty diathesis, or in one who has been much exposed, or addicted to alcoholic excess; and when critical search fails to reveal any adequate local lesion, it is justifiable to suspect an early stage of diffuse endarteritis. I have much pleasure in this connection in referring to a highly valuable and suggestive paper upon this subject by Dr. Arthur F. Meigs.

I have long been in the habit of looking out for the existence of this condition in cases analogous to the one here reported; and not only have I often been led to suspect its presence, but I believe that by the institution of prompt, rigid, and long-continued treatment, the development and course of the disease have been powerfully modified. If I could gain control of this man I should confine him strictly to bed until all fever had been absent continuously for some time, in the hope that if this were attained, the excitement of the circulation would subside, and that his impaired general health would be improved, if not

restored to its former tone. If complete rest in bed were not attainable, the most rigid and minute enforcement of hygienic rules should be insisted upon. I should advise the application of repeated small blisters over the præcordia, the aortic area, and the course of the large arteries. When practicable, the use of hot sulphur baths is of service, or interrupted courses of mercurial inunctions may be prescribed. Internally the most useful remedies are:

R.—Sodii salicylatis, $\frac{3}{4}$ ss.
 Potassii iodidi, $\frac{3}{4}$ ij.
 Tr. aconiti radicosi, gtt. lxxij.
 Aquæ cinnamomi, q. s. ad f $\frac{3}{4}$ vj.—M.

Sig.—From one to two teaspoonfuls in water three times daily.

or else a prolonged course of small doses of Donovan's solution (liq. arsenici et hydragyri iodidi, gtt. ij.—v. t. d., p. c. in water) with aconite or veratrum; or after the process has lasted some time and the vascular tension is lessened, with digitalis.

In cases marked by anæmia or atony, a combination of small doses of iodoform (gr. $\frac{1}{2}$ to gr. i), with pil. ferri barb. (gr. $\frac{1}{2}$ to gr. ij.) has proved very valuable in allaying excitement of circulation, and as an alterative tonic. The urine should be closely watched, not only to detect incipient renal change, but in order that its character may guide the direction of the diet, which in such cases always demands careful attention. It seems impossible to lay down fixed rules, since in each case the state of primary digestion and ultimate assimilation must be considered. It must be understood that in order to counteract the progress of endarteritis, a very prolonged course of treatment, general and medicinal, will be needed.

These remarks upon slight fever of a continued type, are offered in the hope of directing attention more closely to the frequency of its occurrence in chronic conditions, and to its great importance as an aid in diagnosis, and as a guide in treatment.

—Wm. Pepper, M.D., in *Univ. Med. Mag.*

THE DOCTOR AT HOME.

Query: Is the Doctor sufficiently at home? Does he arrange his affairs in a manner to permit him to properly perform the duties connected with his home? Is he not apt to be overcome by the responsibilities of his life; to become so devoted to the performance of his duties to his patients, that he neglects his duties to those who in the mind of every good citizen, should be first—the members of his own family? Is there any other class of persons in the community which so completely ignores the demands of home as the doctors?

The habits of life of the physician naturally make him unsystematic; his duties as he advances

in his profession become burdensome and exacting; the calls upon his time from his patients are continuous, never ending, almost. Then if he properly equip himself so as to perform his duties to his patients, the demands upon him in the direction of study are great, and the ones most apt to be neglected are the members of his own household. Too often he neglects his finances and at the same time neglects wife and children unintentionally, but simply for the reason that he thinks the necessities of his calling demand it.

A doctor's wife of my acquaintance, made the observation on one occasion that she thought a physician's wife should have two husbands, one to attend to his patients and his business and the other to look after the interests of his family. Probably she was right, but there might be a conflict under these conditions between the two regarding their respective duties.

Does not the trouble lie in the fact, after all, that the members of the profession do not study how to perform their work in the easiest manner for themselves and for the good of all concerned? Might they not better be more exacting in the regulation of their hours; might they not educate their patients in the direction of being more considerate? Of course when sickness enters the average home it paralyzes all concerned, and at once the doctor is wanted, and *wanted at once*. If, however, the patients should be properly impressed with the fact that the doctor has rights which ought to be respected, they would stop to think now and then and say: "Can I not arrange my summons for the doctor in a way that he may receive it early in the day, so that his calls may come in such a manner as to enable him to map out his work for the day?" If they were properly reminded of the necessity for sleep on the part of the doctor, might they not frequently send their calls in at an earlier hour, in the day so that they might be made by daylight rather than towards midnight? If the patients be impressed with the fact that the doctor must have sleep and rest and a little time to devote to the pleasure of his family, and this were emphasized by an announcement that all calls received after dark should be charged for at double price, the result might be attained.

Many of the discomforts of a busy doctor's life might be avoided were he to make the proper efforts to study his own interests and to teach his patients to have some regard for his comfort.

He who has no regard for himself will find the world neglectful and wanting in respect for him. A generous consideration for humanity should demand from the physician a selfish watchfulness of the interests of the mechanism through which he serves suffering man.—*Medical Mirror*.

ANTIFEBRIN AS A HYPNOTIC FOR CHILDREN.—Amongst the many hypnotics which at present are

being so liberally supplied by the chemists to the medical profession, it is well not to lose sight of the value of antifebrin in certain groups of cases. Although the drug suggests more that its action is to hinder the development of febrile condition, or when that condition exists, to lower the temperature, still in many cases in my practice it has proved a valuable hypnotic and analgesic. Its value has been most evident in cases of bronchopneumonia, croupous pneumonia, and bronchitis, and that more especially in cases where children have been the sufferers. The marked relief which has frequently followed its administration has in many cases been extremely gratifying. Cases of fretful insomnia of the young, possibly partially caused by pain, fever, or general *malaise* have been speedily relieved by the drug, and from six to eight hours of refreshing sleep have been induced. After sleep the awakening was natural, there being no excitement nor confusion of thought. There was no period of excitement observed before the drug took effect. Along with the onset of sleep there was a fall of temperature, frequently a copious perspiration, at the same time the respiratory acts were slowed and the pulse-rate diminished. In no case have any evil effects been noticed, although the success of the drug induced its employment in a large number of cases. The need of a safe hypnotic for children, such as antifebrin seems to be, will, I think, be readily appreciated, the number of cases where it is required being unfortunately very large. It is still further enhanced as a serviceable drug for children by the fact that it is comparatively tasteless, and also by the smallness of its dose; the dose being from two to five grains, depending of course on the age of the child. A useful way of prescribing it, I have found, is to place the powder on the dorsum of the tongue either alone or mixed with a little powdered sugar. It might also be given in the form of a mixture—the drug being insoluble in a watery menstruum—suspended by the aid of mucilage and sweetened by any of the various flavoring syrups. There is yet another important advantage in hospital and general practice over many recently introduced hypnotics, in the comparative cheapness of the drug.—John Gordon, M.D., in *Br. Med. Jour.*

THE CHOLERA BACILLUS.—Professor Nussbaum, recently speaking on this subject, said: "Since Koch discovered the cholera comma bacillus it has come to be known that no human being living at the place where the epidemic rages escapes this poisonous fungus, for it is in the air we inhale, in the water we drink, upon the food we eat. It is in the soil, and when this is moist and unclean multiplies with extraordinary rapidity. In spite of this fact, in a city of, say, 200,000 persons, visited by cholera, perhaps but 1 per cent., that

is, 2,000 will be attacked. The other 180,000 persons remain unimpaired in health, although they have all inhaled, swallowed and drunk the cholera bacillus. It is known with certainty that the cholera bacillus is dangerous to those persons whose stomach is not in a healthy state, and jeopardises life only when it passes into the intestines. A healthy stomach will digest the bacillus, and therefore it does not reach the intestines in a living state. It will be remembered that Koch succeeded in imparting cholera to guinea-pigs by using opium injections (into the abdominal cavity) and giving the comma bacilli, with soda solution in the food. Of thirty-five guinea-pigs thus experimented on thirty died with the characteristic symptoms and post-mortem appearance of cholera, whereas a large number that received the cholera bacilli alone remained healthy. In most infective diseases it has been shown that the presence of the specific germ is only one element in the causation. A particular condition of the receptive organism is equally essential.—*Br. Med. Jour.*

THE TREATMENT OF HEPATIC JAUNDICE BY HYPODERMIC INJECTIONS OF PILOCARPINE.—Witkowski considers pilocarpine as almost a specific in the treatment of jaundice. Two years ago, he writes (*Bulletin Général de Thérapeutique*), that he had under his care a patient affected with nephritis, complicated with biliary calculi, enlargement of the liver, jaundice, ascites, and dropsy of the legs. This patient was 45 years of age, and seven years previously, during the progress of a pregnancy, she commenced to suffer from pains in the right side, which greatly increased after delivery, and were accompanied by the development of jaundice. Treatment by Carlsbad waters produced somewhat of an improvement, but the jaundice as well as the hepatic colic returned regularly at each menstrual period. This condition continued to increase in severity for a period of four years, and when she first came under the care of the author her condition was extremely serious. Two injections of pilocarpine (half a syringeful of a two per cent. solution) produced notable relief. Hepatic colic disappeared completely, even although morphine had previously proved inefficacious and the liver became less painful to pressure. Under the influence of injections of $\frac{1}{2}$ of a grain of pilocarpine, administered once or twice daily for three weeks, the jaundice, as well as the hepatic pain and the enlargement of the liver completely disappeared. For three years the patient remained perfectly well, and the author states that he has treated thirty analogous cases in a similar manner, in every instance with the most satisfactory results. He notes, however, that the treatment was inefficacious in cases of jaundice resulting from tumors of the liver, and he makes the statement that when in doubtful

cases if pilocarpine, employed from ten to sixteen days, does not cause the disappearance of jaundice, the conclusion may be positively formed that the case is one of a malignant nature. He, therefore, recommends the use of pilocarpine in all cases of jaundice, provided the condition of the heart will permit.—*Therap. Gaz.*

THE TREATMENT OF ANAL ECZEMA.—It is a well-known fact that eczema about the anus and genitals of both sexes frequently resists all the well-known remedies that speedily cure the same affection on other portions of the skin. According to Unna (*Monatshefte f. praktische Dermatologie*), this obstinacy to treatment is attributable in part to the proximity of the disease to a mucous surface and its irritating discharges; in part to its rich supply of nerves, rendering itching so pronounced a system that scratching and its effects make most of the remedial applications useless; finally, because of the difficulty in applying remedies to this region.

The majority of such cases may be cured by the application of well-adapted bandages to which lotions or ointments have been applied, by cauterization with carbolic acid or corrosive sublimate, the use of cocaine, or especially with fomentations of very hot water.

When, in spite of all these remedies, the eczema becomes aggravated, the skin assuming, through the growth of connective tissue and epithelial proliferation, a cicatricial and warty appearance, the itching becomes unendurable, and the patient, from loss of sleep, physically and morally weakened, one should not hesitate to resort to local or general anaesthesia, and with a broad Paquelin cautery slowly burn the affected parts, so that, were the proper remedies not applied immediately, a burn of the second degree would result.

Before the anaesthesia is over, apply either a five per cent. solution of borax, with or without the addition of cocaine, Carron-oil to which two per cent. of carbolic acid is added, or a two per cent. resorcin solution. The following formula is especially useful:

R.—Linseed oil	}	. of each 5 parts.
Lime water		
Oxide of zinc		
Chalk		
Iodoform		1 to 2 parts.—M.

By means of the before-described treatment one can frequently, in fourteen days, cure an eczema of months' or years' duration.—*Jour. of Cutaneous and Genito Urinary Diseases.*

EUCALYPTUS IN SCARLET FEVER.—The value of eucalyptus in destroying the infection of scarlet fever cannot be too widely recognized. On October 26, I saw a nurse in a family where there were three young children. She had the rash over her

chest and arms, the complaint having commenced about thirty-six hours previous. She was removed to the hospital, and Tucker's eucalyptus disinfectant was ordered to be freely used in the nursery, the children being kept in an atmosphere strongly impregnated with it for three days and nights; after that they were allowed out during the day, but the disinfectant was continued in the nursery for four or five days longer, when they were considered safe.

On October 27, I saw a girl, *æt.* about eleven years, whose sister had been sleeping with her. She had had sore throat about two days, and the rash was fully out. The sister was not allowed to sleep with her, but she spent most of her time in the room during the next three days when the new Act came into force and they were separated. Here the disinfectant was rubbed over the skin of the whole body night and morning for three days, afterwards at night only; the emulsion was administered, and the disinfectant freely sprinkled over the bed and about the room. The girl had a severe attack of fever, had rheumatism in her wrists and ankles for a few days. The desquamation was finished about the fifteenth day, and there was no appearance of albumen in the urine. The sister did not develop the disease, although exposed to the infection for five days, and three other children in the house did not take it. There was no carbolic or other sheet used over the door, the disinfection of the patient in the way described being sufficient to prevent any of the poison escaping from her.

It is to be hoped that others will try this method of disinfection, as, if it is as effectual in all cases as I have found it in all so treated during the last six months, there is every reason to believe that the infection of scarlet fever may be arrested in every case.—J. Brendon Curgenvin, M. R. C. S., in *Br. Med. Jour.*

RELATIVE VALUE OF THE NEWER ANALGESICS.—

In the course of a lecture delivered in Cochin Hospital, Paris, Professor Dujardin-Beaumez compared the new antithermic analgesics. The first rank is given to antipyrin, on account of its ready solubility, and the fact that it has little toxic power. He ridicules those who decry its use on the ground of its danger, asserting that there are few substances in the *materia medica* that may not be given in toxic doses, and that these same persons who object to the use of the newer drugs have no hesitation in using morphine and belladonna, which are, in reality, far more dangerous. The chief disadvantage of antipyrin is the scarlatiniform eruption which is often produced by the ingestion of large doses, especially in the case of young girls.

Close after antipyrin, and second only because of its insolubility, the lecturer places methyace-

tanilid, or exalgine, to which he devotes a careful description. It is more active than antipyrin, and does not produce an eruption. In ordinary cases, four grains, twice or three times daily, is a suitable dose, although, in rebellious cases, the quantity has been increased up to twenty grains a day. Owing to its insolubility in water the exalgine must be given in an alcoholic solution. The following is suggested by the author:

R.—Exalgine	2.50
Essence of peppermint	10.
Linden water	120.
Syrup of orange flowers	30.

One teaspoonful (four grains) morning and night.

The remedy seems to relieve pain arising from whatever cause. The speaker had observed relief in three cases of cardialgia with anginous accessions, and Gaudiman had reported but three failures in thirty-two cases of neuralgia.

Phenacetin which is placed third on the list, being sparingly soluble, is proportionately non-toxic. It is best administered in capsules of seven and a half grains, once or twice daily, and is especially serviceable in the neuralgias of the hysterical.

Acetanilid should be placed last, according to this authority, not because it has less power, since that is not true, but on account of the alarming cyanosis which sometimes follows its use. This discoloration, however, is stated to be not particularly harmful, the remedy being exhibited sometimes for months without producing more than a passing bluish discoloration of the skin and mucous membrane.—*Therap. Gaz.*

THEINE IN NEURALGIA.—DR. J. K. BAUDUY relates two cases of neuralgia treated successfully with the hypodermic injection of theine. The first patient was a lady suffering from sciatica, in whom all the usual measures, including galvanism, had been tried without avail. He injected $\frac{1}{4}$ grain of Merck's theine, rapidly increasing the dose on successive days to $\frac{1}{2}$ grain, with the effect of giving immediate and permanent relief. A relapse occurred in the other leg, which was cured by the injection of $\frac{1}{2}$ grain. In another case the patient suffered from occipital and supra-orbital neuralgia, which was cured by the injection of theine into the arm. He says that no unpleasant effects were noticed from its employment.—*Weekly Med. Rev.*
—*The Pract.*

THE CAUSE OF DEATH AFTER CHLOROFORM.—DR. LAUDER BRUNTON, who, as is well known, has been in India, studying the causes of death from the use of chloroform, has sent a dispatch to the *Lancet* in which he says that the results are most instructive, the danger from chloroform being asphyxia or overdose, and not due to the heart directly. These

results, it would seem, indicate a change in the views which were held by the investigator when he left England, viz., that the danger was from stoppage of the heart. Further details of the experiments will be looked for with the greatest interest.—*Lancet*.

CIRCUMCISION.—In performing circumcision the simplest method is the best. I use Henry's phimosi forceps, as I consider them superior to any other. I draw the loose integument forward, clasp the forceps firmly over it, and with a large bladed knife, cut away the surplus tissue at one stroke, and quickly pour a solution of cocaine (I usually use a four per cent. solution) over the cut, which stops all pain in a few seconds. The application of cocaine is repeated at intervals of a few minutes over the inner skin. Then with a pair of strong scissors I slit up the dorsal surface back to the corona; trim the sides with scissors to suit the first cut; if the first cut has been a little short I leave more of the under skin, but if too much is left it may become tender and furnish room for herpes. I then use a fine silk thread, about number eleven, to unite the cut edges. They should be nicely adapted, as in a majority of cases union by first intention can be secured over a large portion of the cut. I sometimes use the interrupted and sometimes the continuous suture. As a dressing I use a small piece of absorbent cotton saturated with balsam Peru; apply a roller bandage with a wide strip of muslin drawn between the legs, fastened in front and back to a strip around the waist for the purpose of retaining the dressings and to hold the penis erect. It is not necessary to put the patient to bed, he can go about his usual business unless it is manual labor. On the second or third day I direct him to take a bath, when I remove the stitches and apply a dressing of vaseline. In a few days he is well; a circumcised Gentile. I have made over 400 circumcisions, and fully fifty per cent. of these were for the cure of herpes. Many men who have herpes imagine they have syphilis, and with or without the advice of a physician take constitutional treatment. Many come to Hot Springs thinking they have "blood diseases." It is for this reason and for cleanliness that I advocate circumcision. I would follow in the footsteps of Moses and circumcise all male children. The operation is simple and free from danger.—Dr. Williams in *N. W. Med. Jour.*

BOXING THE EARS AND ITS RESULTS.—"We would fain hope that, in deference to repeated warnings from various quarters, the injurious practice of boxing the ears, once common in schools, is fast and surely becoming obsolete. It is too much to say that this desirable end has yet been realized. Certainly the recent observations of Mr. W. H. R. Stewart do not give color to this

view. In a pamphlet on "Boxing the Ears and its Results," lately published, and illustrated by appropriate cases, he briefly summarizes his own experience in the matter. He reminds us that, notwithstanding the toughness of the aural drum-head, its tense expanse will rupture only too readily under the sudden impact of air driven inward along the meatus, as it is in the act of cuffing; and he shows that in one instance at least this injury resulted from a very slight though sudden blow. Given early and skilled attention, the wound may heal very kindly, but if the beginning of mischief be overlooked, as it often has been, further signs of inflammation soon follow, and a deaf and suppurating tympanum is the usual result. There is practical wisdom in the statement that this consequence most readily follows in the case of the poorly developed and underfed children who abound in every board school. In them an earache would probably receive no very strict attention, and disease might for a time work havoc unimpeded. When chronic suppuration exists already, and it is only too common, a random knock on the ear may result, as in a case related in the *Lancet* in a fresh otitis, with fatal brain complications. School masters and others, who may at times be tempted to apply the correcting hand somewhat too carelessly, might read the few pages of this little work with equal interest and advantage. The close connection between ear and brain should never be forgotten, and the reflection that injury to the former organ most easily terminates in total deafness, and in suppuration, which may any day take a fatal course, should assist in the preservation of a sometimes difficult patience.—*Lancet*.

ASTHMA.—Of the thousand and one things which have been tried for this disease, nothing in my experience is equal to the nitrite of sodium. I am not fond of mixing drugs, and I therefore generally give it alone. In some cases, however, with the object of promoting sleep, I combine it with hyoscyamus, and in others, again, I have found the tincture of lobelia of some additional benefit. When the nitrite of sodium first came into use I gave some large doses (ten to fifteen grains) in a case of uncomplicated asthma, which had occurred in repeated attacks for years. The first dose made the patient so sick and faint that I could hardly induce her to repeat it; but although a second dose had a similar effect, the patient was freed from her asthmatic attacks completely, and had not had a recurrence when I last saw her, two or three years afterwards. Since then I have given it in from three-to-five-grain doses, frequently repeated, and always with the greatest benefit. With regard to hyoscyamus in this affection, as well as in other diseases, I find that the ordinary doses are of little benefit. Two drachms of the tincture or of the succus for a single dose should

be prescribed, and not less than one drachm when frequently repeated. Besides having an influence over many spasmodic affections, it has a most tranquilising influence on the mind. Given alone in asthma it will not relieve the spasm, but in combination with the nitrite of sodium the improved condition of the patient is sometimes simply marvellous.—*Lancet*.

IODINE AS A REMEDY FOR VOMITING—M. Darthier bears testimony to the value of tincture of iodine administered internally for the relief of vomiting, a remedy recommended by the late Professor Lasegue in the vomiting of pregnancy. The author has observed its use in nineteen cases, eleven of which were tubercular subjects, and found that it is of more value in the vomiting of early phthisis than in that of the later stages of this disease. At the same time he gives instances of advanced cases with obstinate vomiting, where the symptom was largely controlled by the drug. Amongst other cases he gives one of bronchial dilatation (subsequently fatal from acute tuberculosis) in a female, who for three weeks, had regularly vomited after every meal. From the date of commencement of the use of the drug, she ceased to vomit, and after a week's treatment, which was not productive of any sign of iodism, was completely cured of the symptom. Apart from phthical vomiting, M. Darthier finds it useful in alcoholic gastritis, in ulcer of the stomach, and in the vomiting of pregnancy and of chlorosis, instances of which are recorded. He says that the majority of the patients take the iodine with pleasure; it often produces an agreeable sense of warmth in the stomach, lasting from five to twenty minutes. The dose is ten drops, dissolved in 125 grammes of water, taken in three portions immediately after meals. In a certain number of cases, symptoms of iodism are produced, chiefly coryza, but a good many patients do not experience any such inconvenience from it.—*Lancet*.

THE CURE OF FACIAL NEURALGIA, ODONTALGIA AND ALLIED NEUROSES.—Dr. Geo. Leslie, in a paper read before the Medico-Chirurgical Society, of Edinburgh, announces that he has been able to cure many cases of the above-named very troublesome disorders by a very simple procedure. This procedure consists in the application of powdered chloride of sodium—common salt—to the nasal mucous membrane. The salt may be used by the patient as snuff, a pinch of it being taken into the nostrils on the affected side, and in many cases this has been found effectual in preventing a recurrence of the trouble. The best results were obtained when the salt was administered through an insufflator. A small insufflator was used for this purpose, the chamber holding but four grains. As the powder was blown in, the patient was

asked to draw air up the nostril. The application produces but little pain or discomfort. Although a single application usually suffices for the immediate inhibition of the neuralgia, especially when it is recent and localized in one branch of the fifth nerve, in other cases where the disease has been of long standing and of extensive distribution, he had found that insufflation repeated every half-minute for about five minutes was required. In conclusion the author reports a series of cases cured by this novel treatment. Among these were cases of odontalgia, cephalalgia frontal and vertical, facial neuralgias of various types, and bronchial asthma.—*Ed. Med. Jour.*

ATROPINE SOLUTION IN NOCTURNAL EARACHE IN CHILDREN.—Lately I have been treating a lady for sore eyes. Incidentally she told me about her little girl, two years old, crying nightly with earache. The child could not sleep, and would not let the mother sleep. I prescribed one grain atropine sulphate in an ounce of water, and told the mother to drop four drops into the ear whenever the child complained of pain, and let it remain there for twelve to fifteen minutes, explaining that it would do no harm, if the child should even go to sleep with the medicine in the ear. The mother and child have neither lost any sleep since the use of the medicine was begun.

I have been using atropine solution for nocturnal earache in children for about twenty-five years, and have not yet known it to fail to promptly relieve the suffering. During this time I have known it to stop the night-crying from earache of many children. It not only stops the pain promptly, but it in a short time actually cures the trouble. At least, that has been my experience. In pain from tympanic abscesses, furuncles and otitis externa it has no appreciable effect.—*St. Louis Med. and Surg. Journal.*

THE "NORMAL" DIET.—According to Dr. G. Munro Smith, the daily destructive metabolism, which is the great criterion of work done, does not vary much among different occupations. Premising that he does not consider moderate over-eating injurious, he finds that very many men eat considerably more than the most liberal tables; it is not an uncommon thing for an averaged-sized man on very moderate work to eat 25 or 27 ounces of chemically dry food a day. Women eat much less than men, after making allowances for differences in weight and work. Where a man eats 19 ounces, a woman of the same weight and of active habits eats only 14 or 15 ounces. On a diet from which all meat is excluded he has found that 12 to 13 ounces *per diem* will comfortably feed a hard-working man. A moderate amount of stimulants appears to increase the average; moderately free drinking diminishes it. A diet consisting of

one part of nitrogenous to seven or eight non-nitrogenous is a good combination; it is greatly exceeded on the nitrogenous side by the majority of men and women, especially the former. A diet of 12 to 14 ounces of chemically dry food, digestible, with the ingredients in proper proportion, is sufficient to keep in good health an average-sized man on moderate work. The majority of people (in England) eat literally twice as much as this.—*Bristol Medico-Chirurgical Journal*.

TREATMENT OF PHLEGMASIA ALBA DOLENS.—In *L'Union Medicale* of October 19, 1889, the following routine treatment of this troublesome state is given: The patient must be placed absolutely on the back; the diseased limb being treated by forcible extension, and the application of a liniment made up of olive oil, morphine, and chloroform. After this has been applied, the leg should be wrapped up in cotton batting and kept at a uniform temperature, and frequent movement and examination of the parts are to be avoided. To combat the pain, chloral and other narcotics are to be used internally, and hypodermic injections of morphine and laxatives are to be given. After the pain diminishes, alkaline diuretics are to be used to favor the absorption of the œdema, and, if necessary, the skin may be punctured to relieve the swelling. The patient should be confined to bed for thirty days until all evidences of trouble have ceased and the œdema entirely passed away.—*Medical Progress*.

EAR TROUBLE OF THE EMPEROR OF GERMANY.—We learn from the *London Truth* that the Emperor of Germany is again laid up with his ear trouble, chronic suppurative otitis media, and, in consequence of pressure of business, is dangerously temporizing with the treatment advised by his medical attendant. With a hereditary predisposition to scrofula and a consequent chronicity of the affection, it will be a question of time only when the affection shall take an incurable turn, and invite directly an extension of inflammatory action to the meninges, which may jeopardize the life of the distinguished personage. In this country we are taught that such an affection is curable by surgical interference, and the veriest pauper here has a chance equal to that of a king.—*Med. Rec.*

THE Chemist and Druggist gives some amusing counter experiences of country chemists and druggists. One chemist reports the following order just to hand:—"Cammerial powder, Justman's die. Pennerths." A Birmingham chemist had a shiver the other morning. After opening the door, in response to vigorous kicking, a youngster rolled in with the request, "Ha'porth 'ead and stumick pills, and please give me some o' y'r bills to wrap some bloaters in." Edinburgh chemists

report the following curiosities:—"1d. worth of Epsom's Finest Salts."—"A powder for a child twenty-eight years old."—"1d. worth of Squirrels in Syrup."—Lady Customer: "1d. worth of Tincture of Rhubarb. Is it plenty for a dose?" Chemist: "Is it for an adult?" "No, its for a man."—"A pennyworth of Cod Liver Lime."—"A pennyworth of Inside Powder and Fire and Thunder (Violet Powder)." A Lincolnshire chemist reports:—"Sanitary paper" is what she asked for; sand paper is what the new apprentice supplied. Mr. J. H. Williams, Hayle, Cornwall, has recently been called upon to supply the following orders:—"A bottle of Queen Anne's wine; Garibaldi ointment; a stedfast powder for a baby; a 6d. bottle of defective; sick-list powder; hartsin oil; ox allack assed parsin."—*Hosp. Gaz.*

PRESCRIPTION FOR PSORIASIS.—The favourite prescription of Mr. Jonathan Hutchinson for psoriasis is:

R.—Acid. chrysophanic, . . . grains x.
Liq. carbonis deterg., . . . ℥ x.
Hydr. amm. chlorid., . . . grains x.
Adip. benzoat., ʒj.
Misce, flat unguent.

At night the patient should wash the diseased surfaces free from all scales; then, standing before a fire, rub on the ointment, devoting, if possible, half an hour to the operation. This proportion of chrysophanic acid is not irritating, and stains the linen but slightly. With some cases, even a weaker chrysophanic ointment is entirely sufficient. Internally, Mr. Hutchinson prescribes arsenic, though he is not convinced that it is an important adjunct.—*Arch. of Surg.*

CHAS. A. RILEY, M.D., Rockville, Mo., says: Some time since I had occasion to treat one of the worst cases of chronic alcoholism that ever came under my observation. Patient, man, aged twenty-four, had been a constant drinker for several years, interspersed by occasional sprees, and during one of these I was called to treat him. After giving him medicine to arouse his liver to proper action, I commenced giving him tablespoonful doses of Celerina (Rio Chem. Co.) every four hours. He begged for whisky until he got under the influence of Celerina, which was only a few doses; after that he quieted down, and the terrible appetite for, and influence of whisky began to subside. In about eight days he resumed his place in business, and ever since has had no appetite for whisky, and no bad results in any form. I do not think it can be equalled as a remedy in any case where it is indicated.

STANLEY'S TESTIMONY TO THE VALUE OF VACCINATION.—In a recent letter received in London from Stanley, the explorer writes: "The small-

pox broke out among the Manyena and their followers, and the mortality was terrible. Our Zan-zibaris escaped this pest, however, owing to the vaccination they had undergone on board the Madura." Such evidence is, of course, not required by any sensible man, and will not be admitted by the anti-vaccinationist, who will invoke the favorite argument of the sceptic, that of coincidence. Nevertheless it is interesting.—*Med. Record.*

The Faculty of Medicine of Paris, has been informed of an alarming increase of cholera in Central Persia and along in the Turko-Persian frontier. It is feared that the disease is approaching Europe. Inhabitants of the afflicted district are endeavoring to reach the Russian ports on the Caspian Sea, and there is danger that they will bring the cholera with them. The Caspian seaports are generally in a bad sanitary condition, and if the cholera appeared in any of them it would be difficult to suppress. It is not probable the disease will reach Western or Southern Europe during this year.—*Boston Med. and Surg. Jour.*

CREOSOTE IN DIABETES MELLITUS.—Dr. Vincenzo Valentine relates the histories of two brothers who were both afflicted with diabetes mellitus. In spite of the meat diet which was prescribed by Prof. Contani, the urine of both patients continued to be loaded with sugar. The administration of creosote (gradually increased from four to ten drops per day) soon caused the total disappearance of sugar from the urine. No return of the sugar was noted even when the patients partook freely of amylaceous and saccharine diet. The author emphasizes the tolerance for creosote which both patients exhibited.—*Deut. Med. Zeit.—Med. Rev.*

ELECTRICAL STIMULATION IN APNŒA DURING ANÆSTHESIA.—Drs. Hare and Martin advocate the use of the electric brush to the epigastrium in this condition, the other pole being applied to the base of the rib, not on the pneumogastric in the neck. Rapidly interrupted currents are used. They claim danger as existing when stimulation of the phrenic as ordinarily done is tried, because of the closeness of the cardiac inhibitory nerves to the latter. In noticing direct stimulation of the heart by œsophageal electrodes some time ago in one of these reviews, I called attention to this danger. There is, however, little risk in using Faradism in the ordinary way, and it is equally serviceable as galvanism in all the instances, such as failing respiration from opium poisoning, and the like.—*Times and Reg.*

PHOSPHORUS IN DIABETES.—Dr. Balmanno Squire relates the history of a gentleman, sixty years of age, who was brought to him suffering from

eczema. He also had diabetes. Phosphorus was ordered for the relief of the eczema, which it benefited very much, but at the same time it seemed to exert a most favourable influence upon the diabetes. The amount of urine passed in the twenty-four hours was greatly diminished, and the thirst, from which the patient had suffered greatly, caused very little annoyance.—*British Med. Jour.*

TREATMENT OF ERYSIPELAS.—Koch, in the *Wiener klin. Wochenschrift*, 1889, No. 27, recommends an ointment of the following composition: Creoline, 1; iodoform, 4; lanolin, 10; to be applied with a brush over the affected part and for a distance of two or three inches over the healthy skin. In twenty-five cases treated in this manner, after two or three applications a fall of temperature took place, the erysipelas was limited, and the skin resumed its normal color.

CONTAGIOUSNESS OF TUBERCULOSIS.—With reference to the debate on the contagiousness of tuberculosis between married couples, Dr. Leudet read a note in which he concludes that of families he had known personally and attended for the last twenty-five years, of 112 widowers and widows the companion of whom had succumbed to phthisis, seven only were affected with tuberculosis. He therefore affirms that contagion, even between married couples, is extremely rare.

SWEATING OF THE FEET.—The result of extensive experiments in the German army as to the best treatment for excessive sweating of the feet has been to prove the great superiority of chromic acid over all other applications. Of 18,000 cases in which chromic acid was used, 42 per cent. were reported "cured," 50 per cent. "improved," and only 8 per cent. "unrelieved." The feet are first bathed, and, after being thoroughly dried, a 5 per cent. solution of the acid is applied with a brush. Two or three applications suffice, as a rule, but the treatment has sometimes to be repeated after a fortnight.—*Lancet.*

A REMEDY FOR NEURALGIA WITHOUT MORPHINE

Antipyrin, - - - - -	3iij.
Ex. cannabis Ind., - - - - -	} aa. gr. vss.
Ex. aconite, - - - - -	
Caffein, - - - - -	ʒss.
Hyoscine hydrobrom, - - - - -	gr. ʒ.

Divide into thirty capsules.—*Jour. of Am. Med. Assn.*

A VALUABLE GENERAL TONIC FOR FEMALES.—

R.—Syr. Hypophos. comp. 4 oz.
 Aletris Cordial (Rio) 4 oz.
 Sig. Two teaspoonfuls before meals. —M.

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MEDICAL EDUCATION.

"Nature is a cruel and relentless vivisector." She carries on her experiments in the face of laws and fanatics. In her experiments upon man she teaches him lessons in physiology, which if he would but apply, would save months and years of patient labor and yield more correct and trustworthy results. Could anyone acquainted with the study of pathology, for an instant deny its value as teaching and demonstrating the truth of certain physiological theories and the falsity of others. A considerable amount of knowledge is of course necessary to apply the revelations of pathology, and these fundamental points are to be learned by every student before he can fully comprehend what is before him. Our knowledge of the development, growth, and action of healthy cell life has been largely derived from a careful study of cells invaded by disease, so that in a series of cases we can with comparative certainty determine the function, the relation and the importance of the different parts of a cell. Morbid changes associated with certain functional derangements have taught the physician the functions of organs which he otherwise never could have approached.

Nature, through disease, has given to the therapist, suggestions which have proven of lasting benefit to man. The compiled statistics of the careful clinical operator have taught lessons in tissue metabolism more valuable and reliable than

the chemist and his laboratory equipments could have hoped to achieve in centuries of labor. It is sometimes required to assert for medicine a distinctness and an identity of her own. Every scientist is not a physician, although some may contend that if one has a thorough scientific training in the so called "natural sciences," he can have little more to learn to become a physician, and this view gains support in the fact that some of the branches, essential in the medical course, are taught by those who have no knowledge whatever of the application of these subjects to man. What could any intelligent physician think of a professor in physiology lecturing to a class of medical students upon the action of the human heart, upon its sounds, and the action of its valves, who himself had never listened to its beat, and perhaps had never seen that organ, the intricacy of whose mechanism he was attempting to explain. True enough something has been learned of the nervous mechanism of the heart's beat from experiments with the vagi of the frog, but there are other things equally important, and to the medical student far more important, as qualifying him for clinical instruction. In these days of so-called "practical scientists," we have volumes written upon the embryology of the chick, and these treatises are recommended as reliable text books for the medical student. We do not deny the high scientific character of these works, nor the high position their authors occupy as authorities upon this special study, but these are not works to be relied upon to furnish a clear exposition of the physiology of gestation as applied to man, any more than is the scientist to teach to medical students that same process who, himself, has never seen a human fœtus much less an impregnated or gravid human uterus. As the ovisac of the hen cannot be allowed to replace the uterus of the higher biped, any more than the pure scientist can be allowed (ignoring the immense aggregation of medical knowledge and in total ignorance of either clinical or pathological demands) to supply to medicine a comparative science, where one applied to man, learned of, and read in him, is demanded.

If we regard the nervous system of man we recognize in its arrangements a most special claim to marked distinction. It could not be that the functions of the nervous system of man could ever be understood until a very thorough and careful

knowledge of the anatomy of the same had been first acquired, and every student will admit the absolute necessity of careful and frequent dissection, to maintain a knowledge of these particular parts and upon this subject, none, save those, who are alike familiar with human anatomy and human pathology, could give any lectures which would be worth the time of the medical student to attend. No one can regard the rapid and important advancements made in the study of human anatomy, especially that relating to certain regions, but must be impressed with the necessity, for the medical student, of thoroughness in this subject before further work is attempted. What would the average student of medicine say, should the examiner happen to take him into the pharynx, eustachian tube, middle and internal ear? Yet for a physician this knowledge is eminently more required than much of the zoology which he spends his time in studying. We know there are those who imagine these scientific subjects are especially good to expand the mind, and in fact only those who have spent a great part of their lives in such study, can have an expanded mind, but if they glance at the history and art of medicine, they would see in it a field wide enough for the greatest intellect or worthiest being, "The noblest study of mankind is man." It is not unreasonable that the scientist should everywhere urge the value and importance of his own profession and advise the introduction of its subjects into every curriculum. We would do the same for medicine, nor do we seek to render medicine in any degree less scientific, but we object to the substitution of a Natural Science Course for a course upon the primary subjects of medicine. The first year medical student may be very scientific when he is fiddling with a tuning fork and trying to determine the number of its vibrations per second, but he would achieve more useful medical knowledge, if he spent that time in the dissecting room.

The public mind must before long recognize the fact, that doctors must be eminently practical. The authorities of charities, public institutions and public hospitals everywhere must learn and recognize that the possibility of a carefully conducted *post mortem* examination being made in any case, (ending fatally), would be one of the best incentives to careful examinations of patients during life and lead often to a more correct diagnosis,

lest it might fall to the lot of the pathologist to exhibit in the mortuary, evidence of carelessness, or an unpardonable deficiency in diagnostic skill. In many of the hospitals of Canada the pathologist is a young attachè of the staff, and he accepts the position of pathologist as a stepping stone to future advancement; but if we look at the great medical centres in the Old World, we find the most experienced, the most scientific, the most skilled physician of the hospital, the pathologist, and justly so, for we contend, there is no experience of more value to the earnest student of medicine, than that gained in the dead house.

In crowding the Medical Course with unapplied sciences, the tendency is to neglect those of more importance, and the more will this be the case, where those not in touch with the requirements of the medical profession are allowed to influence the curriculum of study.

MEDICAL EXPERT TESTIMONY.

The question of medical testimony in law courts is one which has been made, and very properly so, the subject of much comment during the past few years. No medical man who has been obliged to spend the most valuable hours of his working day in a law court, to the great detriment of his practice and damage of his patients, listening to the quibbles of opposing counsel, and in his turn being badgered by them, but has felt it a great hardship that he has no redress. The very considerable loss of time and money he sustains in protracted cases, and the feeling that he should be attending to his regular business, are not perhaps so galling as the thought that he may be placed in very unpleasant positions by the sharp practice of lawyers who have been "coached" to ask questions, and to ask them in such a way that no man can answer them and convey a right impression to the jury, that palladium (*sic*) of the people's liberties.

Little by little some of the States in the neighboring Republic have been emerging from the semi-barbarous methods of treating medical witnesses, but the wheel turns slowly and we are practically in the same unenviable position that our medical forefathers were, when medicine was largely enveloped in mysticism and superstition. We read of the "hunger strike" and other means

by which prisoners in Siberia undertake to gain some recognition of their rights as human beings. Surely the profession of Canada should arise as a body and make some such strike as will deliver them from this incubus. The feeling among the profession seems to be universal that something should be done in the way of the relief of men, who the most actively engaged and skilful of their *confrères*, are compelled to submit to the damage the law can now inflict upon them. And yet, so far as we know, no concerted action has been taken in Canada. We append the report presented to a Congress held in Paris last August. (*Arch. de l'Anthropologie Criminelle*), by M. M. Guillot and Demange, two members of the legal profession, on "The best method of guaranteeing the interests of both the State and the culprit in the matter of medical expert testimony":

The question of the plurality of experts was discussed and the following propositions were offered:

1. In order to guarantee the interests of Society and of the accused, there should be in each case where medical expert testimony is employed, at least two experts, one of whom shall be selected by the accused or appointed for him by the court in case of his absence or refusal to choose, who shall have the same rights and functions, shall take the same oath, and shall make a common report together and be equally reimbursed by the State.
2. These experts shall be chosen from official lists made up by the public authorities and the scientific bodies designated to that duty.
3. Only those persons who in a competition before a jury composed of professors of the medical faculties and of magistrates, have obtained a special diploma, shall be put on these official lists.
4. The system of plurality of experts necessitates the formation of a supreme medico-legal council at the seats of medical instruction that shall be charged with deciding the experts of that region and be the final authority.
5. The examining magistrate shall assist at autopsies and examinations, except in certain special cases, so as to be able to instruct the expert as to facts aiding his researches.
6. The advocate of the accused may also assist so that he may be able to present the objections of the defense to the expert.
7. Instruction, comprising the general principles of legal medicine, should complete in the law schools the course of criminal procedure.
8. It is advisable, in order to facilitate the study of legal medicine, to make an exception to the general principle of secrecy, so far as to allow the students to be present at medico-legal autopsies, customarily subject to the veto of the magistrate.
9. There should be collected in the establishments of legal medicine or in public records, archives and medico-legal collections under the direction of magistrates and experts.

These propositions were discussed (*Am. Jour. of Insanity*) by the congress and some difference of opinion brought out in regard so the advisability of a multiplicity of experts. The first proposition was therefore voted with the following prefix: "Reserving its opinion as to the advisability of having opposing experts, the Congress, etc.," and the second and third propositions were omitted and in their place the following was adopted: "The experts shall be chosen, save in cases requiring special competency, from official lists made up by the public authorities and designated scientific bodies." The other propositions

notwithstanding some of them were criticized, were voted by the Congress with the following addition: "It is indispensable that the examining magistrates should have at their disposal the materials and necessary means for giving all needed instructions, thoroughly and rapidly."

SHORTHAND FOR MEDICAL STUDENTS.

Some medical gentlemen of prominence, in London, England, have inaugurated a movement to promote the study of phonography by medical students.

They claim that a practical knowledge of shorthand, acquired previous to the commencement of their medical studies, would greatly facilitate their progress by enabling them to take full notes of lectures, etc., to which they could refer at any time, leaving little to their memory or imagination. This would be of much benefit to the student in assisting the memory, and acquiring an accurate knowledge of the principles taught during his college course. Pitman's System of phonography is exclusively recommended, as answering every purpose.

Doubtless a knowledge of shorthand would be of importance to students, not only in medicine, but in most other studies. But the time devoted to its acquisition must take the place of some other preparatory study. It is, therefore, a matter for consideration whether any of these can be eliminated, without disadvantage from the educational course. Experience has furnished us with little upon which we can depend in this matter, and we must rely for further tests on the superior success of those who have learned shorthand and have practically availed themselves of its advantages in their medical course. That the medical studies of the present day are sufficient to occupy all the time from youth to mature manhood, we think will not be questioned. Hence, unless it can be clearly shown that some of the preparatory work can be dropped, or the ability to take advantage of shorthand in taking notes, etc., is more than sufficient to make up for the time lost in acquiring it, we cannot see the advantage of placing more burdens on the students.

It might be, and we are of the opinion that it would be, advantageous, not only to the medical student, but to all students and business men, if shorthand were taught as one of the regular subjects at our public schools. It would not take

much time per day for a pupil, who attends one of our public schools from, say, the age of seven to twelve years, to obtain a fair knowledge of the science, and some practical and useful knowledge of the art of phonography, which for the remainder of his life would be of great advantage to him. Here we come upon the dangerous ground of recommending the dropping of some of the subjects already on the curriculum of studies at our public schools. With this we have no desire to deal, even if we possessed a knowledge which would enable us to judge on the matter, but we are decidedly of the opinion that the ability to write shorthand, could be obtained in some of the time now devoted to the study of certain matters in English Grammar, such, for instance, as rules of speech which are rarely applied in the class-room even, and never outside of it. And several other reforms in the time-honored public school curriculum, might advantageously be made, which would give sufficient time for learning phonography without serious loss to the pupil in his subsequent studies or after life.

A DOCTORS' STRIKE.—A disposition on the part of French doctors, says the *Med. Press and Circ.*, has shown itself to strike against low pay in the matter of complying with requisitions to perform post mortem examinations on the bodies of persons respecting which the police authorities are desirous of obtaining further information. When one is aware that the remuneration for such examination, including a detailed report in writing, averages five shillings, no surprise can be felt at the dissatisfaction felt and expressed, although there ought to be more dignified means of bringing pressure to bear than the summary and illegal plan of refusing to obey the magistrate's order. A few weeks since several medical men were prosecuted for illegal refusal in this respect at Rodez, and after a trial in which the feelings of the parties waxed rather warm, they were duly condemned in nominal penalties. The same thing occurred again in the department of the Rhone last week when two malcontents were fined six francs and costs for declining to conform to the law which authorises magistrates to requisition the services of medical men.

FOR THRUSH AND SORDES.—Dr. Ord, writing

in the *Lancet*, says: Among the ill-fed children of the poorest residents of our large cities thrush is an extremely common and troublesome complaint. The following lotion, to be applied frequently with a feather or brush to the white patches, kills the *oidium albicans* more quickly than any other I know, and removes the patches after a few applications, leaving healthy mucous membrane. It consists of equal parts of *lotio nigra* and glycerine mixed. I attribute its action to the germicidal power of the mercury. The quantity used is so small as to be quite harmless. Another condition in which I have found the same lotion invaluable is in that of the *sordes* which collect so abundantly on the teeth, lips, and tongue in many cases of enteric fever. It cleans these parts as if by magic, and renders that unpleasant process known as "scraping the tongue" quite unnecessary. It may also with advantage be painted over the fauces, etc., in those unhealthy conditions of the throat which are so common in typhoid. I tried it in one case of catarrhal stomatitis, but it had no effect, whereas chlorate of potash effected an immediate cure. Also in the *sordes* of advanced phthisis it seems to be of no use. Not having seen this lotion mentioned in any book, and having found it superior to any of the usual preparations in use for these affections, I venture to bring it to the notice of the profession, in the hope that it may prove as great a boon to other practitioners as it has been to myself.

A LARGE DOSE OF SULPHONAL WITHOUT FATAL SYMPTOMS.—A Berlin correspondent of the *Med. Press and Cir.*, notes the following remarkable facts observed after a very large dose of sulphonal:—

On January 5th of the present year a workman in Riedel's factory took a full tablespoonful of sulphonal, that he might for once have a good sound sleep. Half an hour later, feeling no effect, he took two tablespoonfuls more and went at once into the village beerhouse. In about half an hour after taking the second part of half a glass of beer, such a tired feeling came over him that he left the remainder of the beer on the table, "went home and so to bed," as Pepys says. He remembers nothing after this. At ten o'clock on the morning of January 8th he was aroused from his sleep, recognized the people about him and went

off to sleep again. On the 9th, at one in the afternoon, he was awakened by his wife, and remained awake till eight in the evening, felt stupid, but was rabidly hungry, and enjoyed some food. The next morning he got up at seven o'clock, and from that time felt no trace of tiredness or mental disturbance.

Three tablespoonfuls of sulphonal would equal about 420 grains. No wonder he slept for days and nights. The wonder is that he sleeps not now.

THE TREATMENT OF PHELGMASIA ALBA DOLENS.—*L'Union Med.* attributes to Delore and Poulett the following sketch of the proper treatment of phlegmasia alba dolens :

Absolute rest in the dorsal decubitus, the affected members placed in an attitude of forced extension, and a mixture of oil and chloroform applied ; then cotton batting is placed around the limb, which is to be kept warm at an even temperature. Movement and repeated examinations are to be avoided. To combat pain, narcotics by the mouth, subcutaneous injections of morphine, and laxatives are in order. When pain begins to subside, alkaline and diuretic drinks may be given to hasten resolution of the œdema. If there is much œdema, the fluid may be allowed to ooze out through small incisions or through a drainage-tube. The patient should be kept in bed for thirty days after the cessation of pain, and until the œdema has almost completely disappeared.

FOR RHEUMATISM.—Dr. Staples states in the *Hosp. Gaz.* that he has found oil of wintergreen very satisfactory, and in almost every case it gives relief when administered internally in minimum doses. He has also used the oil for acute gout. His prescription for a liniment is :—

- R.—Oil of wintergreen, f ʒ ij
- Olive oil, f ʒ iij
- Soap liniment, f ʒ iij—M.

A very little of the liniment is used ; caution the patient against using too much, and if the rheumatism is limited to one or two joints, he recommends applying cotton-wool after its application, and then bandaging the joints.

ANOTHER VIEW ABOUT HYPERTROPHED TURBINATED BONES.—Much has been said and written as to the evils arising from hypertrophy of the

turbinated bones. That the evils may have been exaggerated regarding this condition, will appear from the following (*Med. Rec.*) :—

Dr. Mayer, in the course of some remarks, said there were cases in which hypertrophy of the turbinated bone produced no symptoms, and he thought it depended a good deal upon the point at which pressure was made, whether it involved nerve-filaments and produced symptoms. Then, too, there might be irregular distribution of the nerve. He believed strongly in removing hypertrophied tissue of the inferior turbinated bone, and establishing free drainage.

THE second congress for the study of tuberculosis will be held at Paris, late in July, 1890. The subjects for discussion will be ; 1 Identity of tuberculosis in man with that in the bovine species, fowls and other animals. 2. Bacterial and morbid associations of tuberculosis. 3. Hospital provision for those suffering from tubercular disease. 4. Agents not injurious to the organism, capable of destroying Koch's bacillus, from the point of view of the prophylaxis and treatment of human and animal tuberculosis. The general secretary is Dr. L. H. Petit, 11 Rue Monge, Paris, to whom the names of those who desire to take part in the Congress should be sent together with a postal order for twenty francs. The president of the Congress is Professor Villemin.

ROSENBERG ON THE TREATMENT OF LEUKOPLAKIA.—In all remedies used in the treatment of leukoplakia (*Ed. Med. Jour.*) the balsam of Peru holds first place. It not only checks the pain and heals the lesions denuded of epithelium, but clears up cloudy epithelial patches, and causes deposits to disappear. Two things are necessary—protracted application and a pure preparation of the drug. When fissures are present and the epithelium denuded, the balsam is to be applied gently with a brush, but otherwise a stiff brush is to be thoroughly used, so as to act in a degree mechanically. The application should be made three times a day, and kept in contact with the lesions for at least five minutes at a time.

OXYTOCIC ACTION OF QUININE.—In a paper lately read before the Clinical Society of Maryland, Dr. J. C. Atkinson gave the following as his conclusions in regard to this action of quinine :—

1. The cinchona preparations have not a fixed and definite influence in causing contractions of the uterus.

2. An oxytocic action is occasionally produced by these remedies. This action depends upon idiosyncrasy; and, as in the other idiosyncratic reactions to cinchona, it is impossible to foretell, in any given subject, its manifestation.

3. There is some evidence that this action is only exerted under large doses or in debilitated subjects.

4. Cinchona and its derivatives should be employed during pregnancy with great circumspection, and should be at once withheld upon the supervention of symptoms indicating a uterine-motor influence.

FOR HÆMORRHOIDS.—Kossobudski (*Deutsche Med. Woch.*) gives the following formulæ for the treatment of hæmorrhoids. For the external variety:

R.—Chrysarobin 12 grains.
Iodoform 5 “
Extract of belladonna 9 “
Vaseline 1 ounce.—M.

Sig.—Wash the parts with a 2% solution of carbolic acid or a 1% solution of creolin several times daily and apply the ointment.

For the internal variety he uses the following suppositories, which cure most of the cases after two or three months' use:

R.—Chrysarobin 1½ grains.
Iodoform ⅓ grain.
Extract of belladonna 1 grain.
Cacao butter 30 grains.—M.

TO PREVENT MIGRAINE.—Dr. Hammerschlog, (*All. Med. Cent. Zeit.*) (*Med. Pract.*) employs the following combination for the prevention of attacks of migraine, and states that hitherto it has always proved successful:

R.—Caffeinæ citrat. gr. xv.
Phenacetin, gr. xxx.
Sacch. albi, gr. xv.—M.
Fiat. pulv. Div. in capsulæ—X.

Sig.—One to be taken, in the intervals of the attacks, every two or three hours.

Phenacetin does not act so promptly when given alone. This treatment should be continued until

a decided remission occurs, which will usually be in a short time.

COCAINE IN VOMITING.—Dr. Everson, in *N. W. Med. Jour.*, says, in vomiting in pregnancy $\frac{1}{8}$ to $\frac{1}{4}$ grain, three times daily, will generally be sufficient. A formula which has proved useful in my hands in the latter affection is the following:

R Cocain. hydrochlorat. gr. $\frac{1}{8}$
Ext. nucis vomicæ gr. $\frac{1}{6}$
Pulv. asafetida gr. ij M.
Fiat. capsula, j.

Sig.—Three times a day, half an hour before eating.

Cocaine will be found of value where other remedies fail. I have found it successful in those cases of vomiting of pregnancy in which the so-called specifics, oxalate of cerium, etc., have failed.

SHARP PRACTICE.—Prof. Billroth (*Times and Register*) stipulated to perform an operation on a Russian Jew, in a small town, for 5,000 marks. On making the journey, he was informed that the Jew was dead, but to render him some equivalent for his loss, an offer was made for him to treat five hospital patients at 1,000 marks each. He accepted the offer, and before starting homeward learned that one of the patients whom he had just treated was the supposed dead man, who had received the Professor's services for one-fifth the original fee.

SALICYLATE OF SODA SUPERIOR TO QUININE IN CONTROLLING FEVER OF TUBERCULOSIS.—Professor Jaquoud, of Paris (*Jour. of Am. Med. Association*), considers the salicylate of soda as the best antipyretic in febrile tuberculosis, given in a maximum dose of two grammes in twenty-four hours. A daily dose of one gramme may be continued for a long time, taking the precaution to give the patient a large quantity of water after each dose. In the light of present facts he considers it inadmissible to give the sulphate of quinine in these cases.

FEMALE PHYSICIANS IN ENGLAND.—There are at present (*Med. News*) 73 female physicians in England holding diplomas and licenses to practise. London possesses 22, other cities 34, and 17 in India are also included. The new Hospital for women has a staff composed entirely of “lady doctors,” although the consulting physicians are of

the sterner sex. The medical school for women has a faculty of 48 professors, 4 of whom are ladies, and 91 students.

THE arrival in Havana, Cuba, is announced (*Med. and Surg. Reporter*) of Dr. Hamilton, of the Marine-Hospital Service, and Dr. Horlbeck, of the Charleston Board of Health. They are a part of a medical committee empowered to make a mid-winter inspection of the yellow-fever habitats in Cuba and also of the Key West quarantine, Tampa, Sanford, and other exposed points in Florida.

BORATED LANOLIN.—The following preparation (*Med. and Surg. Reporter*) is recommended as being excellent for softening the hands or general toilet purposes: 1 part of borax is rubbed with 10 parts of lanolin, and 100 parts of water are gradually added. This makes an emulsion in which the lanolin is very finely divided and quickly absorbed by the skin. It may be blended with glycerin and perfumed.

SALICYLATE OF SODA IN DYSMENORRŒA.—Reynolds and Haven (*Boston Med. and Surg. Jour.*) have had excellent results from the use of salicylate of soda in dysmenorrhœa. The action they think is only temporary, but the relief from pain most marked. They gave it in ten grain doses three times a day for one week before the catamenia, and afterwards as long as the pain had usually lasted.

SWEAT-BANDS OF HATS may contain even twenty-eight per cent. of fatty acids which in summer may penetrate into the forehead and cause inflammation and corrode deeply into the skin. Rub with burnt magnesia every little while, so as to leave a small film on the band; wipe it off with a cloth before applying again.—*Prager med. Wochenschrift*.

FOR TAPEWORM.—Dr. Canopi (*Med. Press and Cir.*) recommends the following treatment for the removal of tapeworm. In the evening a dose of castor oil should be administered. The following morning two drachms of thymol divided into 12 doses are to be taken, a dose every quarter of an hour, and after the last dose of thymol, a dose (about five fluid drachms) of castor oil. A few minutes after the last dose of castor oil has been taken the tapeworm will be expelled entire,

FOR enuresis the *Cincinnati Med. Jour.* quotes the following from Dr. William Perry Watson as very successful, especially in children:

R.—Atropiæ sulph. gr. j.
Aq. destillat ʒ j.—M.

Of this one drop for each year of the age of the child is given at four and seven o'clock in the evening.

Under this treatment a permanent cure was effected in a series of thirty consecutive cases occurring in private and asylum practice. He claims that the sulphate of atropine in enuresis is a remedy which is unequalled in materia medica.

ANOTHER TÆNIACIDE.—The *Deutsche Med. Woch* gives the following as efficient:—

R.—Croton oil, 1 drop.
Chloroform, 1 drachm.
Glycerine, 1¼ ounces.—M.

One-half of this should be taken in the morning on an empty stomach; half an hour later, the remainder. The patient's diet should have been light on the previous day.

The London Lancet says: There seems to be little doubt of the advance of cholera in Asia Minor, and therefore of the increasing probability of its invading Europe. Intelligence was received this week from Bassorah stating that 3,000 fatal cases had occurred there, including the English Vice-Consul, Mr. Robertson, and two of his children.

DR. H. MARION SIMS treats specific vaginitis (*Pacific Med. Jour.*) in the female by painting the walls of the vagina with a solution of nitrate of silver of the strength of one drachm to the ounce. Erosions of the cervix, with or without lacerations he relieves rapidly by an application on absorbent cotton of one part of Monsels solution to four parts of water.

DR. FRANK FERGUSON, Pathologist to the New York Hospital, has been elected Professor of Pathology in the New York Post Graduate Medical School and Hospital.

REMOVAL.—Dr. Price Brown has removed from No. 41 to No. 10 Carlton Street.

Books and Pamphlets.

THE NATIONAL MEDICAL DICTIONARY, by John S. Billings, A.M., M.D., LL.D., Edin. and Harv.; D.C.L. Oxen., etc., with the collaboration of eleven others. Published by Lea Brothers & Co., Philadelphia.

We know of no more required work than a good medical dictionary which shall include the many new terms, which during the last few years have been introduced into medicine, and regarding which the older dictionaries leave the general practitioner and student so far behind the times. With the advancement of the special sciences and departments, so many varied terms have been employed to designate certain conditions, and express more modern views and explanations that the old dictionaries of medicine have become next to useless. In the work mentioned above we have one of the most complete medical dictionaries that could be desired. We have not had to hand so satisfactory and pleasing a work for many a day, and in saying it supplies a long felt need to medical men, is but to speak what must be the universal feeling of all who take the trouble to examine its pages. It is not merely a medical dictionary but one complete regarding all medical terminology and language. It is handsomely bound in two volumes and a work, which we do not think it too much to say, is indispensable to every medical man's library.

"GRIP" FOR 1890. CANADA'S COMIC PAPER. *Grip* Printing and Publishing Co., Toronto.

Grip begins its thirty-fourth volume with the New Year, which means that this brave little journal has celebrated its *seventeenth* birthday. When we say—as we can without hesitation—that its ability both literary and artistic has been kept up to a uniformly high standard throughout this long period, and that to-day it is as bright as ever, we mention a fact exceedingly creditable, not only to the conductors of *Grip*, but also to the Canadian people, without whose appreciation and support this phenomenon of journalism would have been impossible. We call it a phenomenon advisedly, for so far as we are aware, there is not another country of Canada's age—certainly no other Colony—that can boast of a sixteen-year-old

Comic Journal. *Grip* has well deserved its success. It is not merely a clever and amusing paper, it is also a recognized power in Canadian public life, and a power which, we are glad to say, is always on the right side where questions of moral principle are concerned. It ought to be a pleasure to every Canadian to contribute to the success of such a journal,—and the most practical way of doing this is by subscribing. The price is only Two Dollars per year, or if taken in connection with THE CANADA LANCET, the price for both will be \$4.50. Subscriptions may be sent direct to *Grip*, Toronto, or to this office.

A TEXT-BOOK OF ANIMAL PHYSIOLOGY, with introductory chapters on General Biology and full Treatment of Reproduction, by Wesley Mills, M.A., M.D., L.R.C.P., Eng., Prof. Physiology in McGill University and the Veterinary College, Montreal. Over 500 illustrations. New York: D. Appleton & Co.,

It is our pleasant duty to congratulate the well-known author, Prof. Mills, on producing a work of Physiology upon such advanced lines. He has in his work produced, side by side, biology human and comparative; but he has also distinctly separated them when and where necessary. The author has also given reference to the work done by the pathology of man in elucidating many physiological problems. If we may be allowed to specify any particular portion of the work as of special excellence, we would mention the chapters on The Spinal Cord and Brain, as being, in our opinion, particularly complete. We regard it as a work of great excellence.

HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS, by Samuel O. L. Potter, M.A., M.D., Professor of the Theory and Practice of Medicine, in the Cooper Medical College of San Francisco. Price \$3.00, cloth; \$4.00 in full leather. Second edition, revised and enlarged, Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street.

This treatise on Materia Medica and Therapeutics, is one full of practical points and quite up to date, regarding the origin, source and action of all modern therapeutic agents and methods. In addition it contains many practical and valuable hints to the practitioner, regarding the combination of drugs, and the method of prescribing them. It is a work we can highly recommend.