to think, in the absence of all other proof, that the poison may very possibly have a fungoid origin; but I must confess that I have no proofs to adduce on this matter. It is, however, evident that no really tenable hypothesis has been advanced, adequately supported by demonstration, to explain the causes and effects of these most distressing cases.

I am largely indebted for many of the foregoing remarks to a paper by M. E. Vanden Court, which was originally published in the *Journal de Chimie Medicale*, and since translated in the May, June, July, and August numbers of the *Chemist*, in the July number of which the author inclines to the belief that the poisonous effects may be due to "the presence of an elementary vegetable" (fungus or alga) which he names *sarcina botulina*.

Swansea, August 1855.

A CASE OF COLLAPSED MEMBRANÆ TYMPANORUM.

By THOMAS WESTROPP, Esq., Bristol.

IN the ASSOCIATION JOURNAL for May 18th, I endeavoured to describe one of the forms of deafness ordinarily met with, and admitting of much amelioration, if the surgeon will adopt simple, rational treatment, and the patient persevere untiringly in its adoption for a period varying from two to six weeks. Without any great pretence to novelty, I will put forward the details of a more aggravated case, in order to show what perseverance will sometimes do in the alleviation of a malady which is usually abandoned as hopeless by the practitioner of medicine, and allowed to fall into the hands of ignorant and unprincipled pretenders.

CASE. Catherine Cloe, aged 49 years, a washerwoman, applied at the King Street Ear and Eye Dispensary, on the 8th of March, complaining of deafness of both ears, and noises of all sorts, which distressed her much. When viewed through a speculum, each membrana tympani appeared whitish, thickened, and drawn inward. On applying a stethoscope to each ear, and desiring her to blow in the proper way, I found that the Eustachian tube on each side, more especially on the right, was scarcely pervious. Eustachian catheterism had been tried before she came to me, she said, with some little advantage; but, though this was a case that might be benefited by the operation, still it is scarcely advisable when more appropriate treatment is called for. Her bowels were rather habitually constipated, and prone to flatulence. She was advised to take two pills of aloes and assafetida on two alternate nights, and to apply a small blister behind both ears. I may here remark, that the popular custom of blistering behind the ears is too much in vogue with the profession, to the neglect of much additional treatment. I find now, as the result of considerable experience in ear disease, that patients who have been repeatedly blistered by others, and subsequently by myself, have received little or no benefit from it till other additional and more appropriate remedies have been superadded, and long and perseveringly tried. I sometimes meet with persons who have been for years occasionally applying blisters behind the ears, and taking medicines, both patent and *secundum artem*, to settle the stomach; and all without any material benefit. Again, there is one axiom that should be observed in dealing with persons suffering from ear affections, viz., to tell them candidly of the peculiar tediousness of their treatment, and honestly recommend them not to commence treatment at all unless they are determined to persevere regularly and unintermittingly till a fair trial of aural surgery has been had recourse to. The greatest limit of this acoustic ordeal I would set down at three months; but generally a month, or even less, will tell whether the case is likely to be amenable to treatment. I am now alluding to chronic affections which have existed from one to twenty or more years: of course acute cases are as much within the pale of art as any other acute affec-

tion. I syringed the ears, to clear out a little cerumen and flakes of loose cuticle, in order to brush each membrane with a five-grain solution of nitrate of silver. I applied a stronger solution to the pharynx, trying to reach above the velum pendulum palati, so as to get near the opening of each Eustachian tube.

March 14th. On applying a stethoscope over each auricle alternately, while the patient blew, air was heard to enter a little more freely through the right Eustachian tube; the left was much as before; the membranæ tympanorum were as before. I may here remark, that the solution of nitrate of silver does not usually blacken the membrana tympani; but, should any of it touch the outer orifice of the meatus, the usual discoloration is perceived in a day or two. I suppose the light does not generally get within freely enough. The pills had operated moderately; she felt better, having before suffered from tympanitis. I applied a little of a twenty-grain solution of nitrate of silver to each membrana tympani, and to the pharynx high up; and dressed the blister with an ointment containing strychnia and veratria. The patient was ordered to take a tablespoonful of infusion of cinchona bark, with the eighth of a grain of biniodide of mercury and a grain of iodide of potassium, twice a day.

March 13th. The stethoscopic phenomena remained much as before. The patient said she felt her throat much more comfortable; the hearing was much the same as on the last day. A solution of nitrate of silver was applied to the throat and membranes of the ear. Tincture of iodine was applied behind each ear; and the patient was ordered to apply a leech to the orifice of each meatus.

March 15th. The leeches had been applied, but too far out on the auricle; and, as she continued to complain greatly of tinnitus aurium, I prescribed a tablespoonful thrice a day, after food, of the following mixture.

R. Infusi cinchonæ ʒvij.
Solutionis hydrargyri bichloridi ʒi.
Tincturæ arnicæ montanæ ʒiij.
Tincturæ zingiberis ʒss. M.

She was also ordered to force tobacco smoke through the Eustachian tubes every night. Nitrate of silver solution was applied in both ears, and tincture of iodine behind the ears. She stated that the noises were much more annoying to her than the deafness.

March 20th. Tinnitus aurium was greatly lessened. She was ordered to continue the mixture; local treatment as before. As the right Eustachian tube was partly obstructed, I directed her to put a small blister under the right ear, between the sterno-mastoid muscle and the angle of the jaw. I have several times seen a blister in this locality do great service where deafness was complicated with throat affections.

March 22nd. The noises were still less; the right Eustachian tube was still obstructed. She had been using tobacco smoke, but, from not understanding how to force it into the ears, with no appreciable benefit. I dressed the blistered surface with veratria and strychnia ointment, and applied a solution of strychnia in both ears. The mixture was continued.

March 24th. She told me now, for the first time, that she had a fever about twenty years ago, and that she had been more or less deaf since. I sometimes wondered at the amount of permanent deafness being compatible with her first account, in which she stated that her ailment was only of two years' duration. I now found that a fresh attack came on then. Her hearing was now a little better than when she first came, though she could not hear my watch on touching the right ear with it. She said she could hear a louder one at home. The tinnitus was less; instead of being like the rolling of a cart, it now assumed a hissing character. She had ceased taking the arnica mixture, and was now directed to resume the biniodide of mercury, as at first. I dressed the blistered surface behind the right ear with veratria and strychnia ointment; this smarted a good deal, and delayed the healing; which was advantageous. She was now using the tobacco smoke properly.

Glycerine was introduced into both ears after syringing. The membranes were beginning to clear a little.

March 27th. The noises were sometimes absent for a whole day. There was no sign of ptialism yet; she complained of some irritation about the throat, which had for some time past excited cough. I ordered ipecacuanha and cayenne lozenges, and applied nitrate of silver solution to the throat and membranes; and directed her to continue her mixture, which she said kept her bowels open without purging.

March 29th. She was rather deaf than usual to-day, which she attributed to the weather. The tinnitus aurium was very slight now. I ordered a leech to be applied to the floor of the right nostril. I find that the abstraction of blood in this way combats the congestions of the Eustachian tubes more than any other plan, as it draws the blood directly from the part, by reason of continuity of membranes. If we desire to be very energetic in our treatment, the application of one or more leeches to the orifice of the meatus, and about an inch within the nostril of the same side, hardly ever fails to make, *if the application is made to both at the same moment*, a permanent impression on an obstructed Eustachian tube. I have consulted various works, but cannot see this manner of leeching recommended. I believe it was Mr. Wilde who first advised leeching the meatus itself; the other method here advised will be found a great improvement on old customs. I am aware that leeching within the nostril has often been had recourse to for the relief of affections of the lachrymal sac. Solution of strychnia was applied within each meatus. I brushed the throat again with nitrate of silver solution, and applied tincture of iodine behind both ears; some hair being removed, to allow a larger surface.

March 31st. The leech having been applied within the right nostril, but not so far in as directed, the bleeding had somewhat freed the right Eustachian tube (which was the one I found with the stethoscope most obstructed). The hearing on this side was a little better, as she now heard a watch on touching; she also heard conversation better. The tinnitus was now greater in the left than in the right. I applied a solution of strychnia in both ears, and tincture of iodine over each mastoid region, directing it not to be washed off; I also ordered a leech to be applied to the left nostril. The patient was directed to steam the throat every evening with ten drops of the following, added to a vessel of boiling water.

℞ Creasoti gtss. xx.
Tincturæ belladonnæ.
Tincturæ aconiti, aa ʒj. M.

The mixture was continued.

April 5th. She complained of her hearing being worse than usual to-day. Though she was in good general health and comfortable circumstances, she was very prone to complain of something every day. She said the catamenia ceased seven years ago. The leech last applied took a fair quantity of blood from the left nostril; the Eustachian tube was tolerably free; she had ceased using the tobacco smoke, and was steaming with the vapour of creasote instead. A peculiar idiosyncrasy existed in this woman. The slightest counterirritation (more particularly with tincture of iodine), or even the bite of a leech, causes unusual soreness and subsequent pain and twitching in her head and neck; I, therefore, this day omitted the tincture of iodine. She said she suffered much from flatulence, and this day from tinnitus; the latter I attributed, in some measure, to the state of the intestinal canal. She was ordered to take two pills of aloes and assafetida before dinner, on two alternate days, also a tablespoonful twice a day of the following mixture:—

℞ Infusi cinchonæ ʒvj
Solutionis hydrargyri bichloridi ʒj
Solutionis strychniæ et veratriæ ʒj
Tincturæ zingiberis ʒij. M.

Each dose contained one-sixteenth of a grain of bichloride of mercury, and one-thirty-second of a grain of each alkaloid, dissolved in water, with the help of a little hydro-

chloric acid. Glycerine was applied to each membrane tympani.

April 7th. The noises and deafness were less, as was also the flatus. Her countenance showed that she had been relieved from intestinal irritation. It is well to bear in mind, that many a gloomy countenance and despondent mind is owing to a dyspeptic stomach, or some atmospheric influence. As the last mixture agreed, she was ordered to take it three times a day; to apply a leech to the orifice of each meatus.

April 10th. Glycerine was applied within each meatus.

April 12th. She was better in every respect; she had had some little starting and twitching from the mixture. The following was prescribed:—

℞ Solutionis hydrargyri biniodidi et potassii iodidi ʒjss
Tincturæ arnicæ montanæ ʒvj
Aque ʒx. M.
Sumatur cochleare magnum ter in die.

Glycerine was applied as before.

April 17th. She said her hearing continued to improve. The voices of others do not appear so muffled as before. I began to think that the membranæ tympanorum did not appear so collapsed and dull as on former inspections. Having syringed out some loose flakes of epithelium, I again applied glycerine.

April 19th. She was as before, and was directed to take two assafetida and aloes pills, and to use every morning some of the following gargle:—

℞ Infusi cinchonæ ʒiv
Aluminis gr. viij
Zinci sulphatis gr. viij
Tincturæ capsici,
Tincturæ catechu, aa ʒss
Aque ʒiv. M.

Glycerine as before. She was also directed to apply a leech to the orifice of the left meatus.

April 21st. The hearing of the left ear was something better. I ordered another leech to be applied to the right meatus; and in place of the mixture, five grains of Plummer's pill to be taken every night.

April 26th. She had had another leech applied to the left nostril. Each meatus appeared unusually dry, and no cerumen was secreted. I, therefore, instead of the glycerine, applied this day some dilute citrine ointment; I much prefer what is called unguentum citrinum fuscum, made with cod-liver oil, in all ear and eye cases in which it is required. Glycerine occasionally improves the hearing, by keeping the parts moist; but I do not believe it has any specific effect, as is commonly imagined.

April 28th. No sign of ptialism had ever yet manifested itself in this woman. I applied the brown citrine ointment again.

May 1st. The hearing, she said, continued to improve. I noticed some cerumen present to-day. She was directed to resume the mixture containing biniodide of mercury and hydriodate of potash, as her supply of pills was used.

May 3rd. She heard a watch at one inch with the right ear, and on touching with the left. She had had another leech applied to the left nostril. The Eustachian tubes admitted more air than usual. I again moistened each ear with glycerine.

May 5th. I applied the dilute citrine ointment as before. She said she heard ordinary conversation tolerably well, but could not well distinguish the words of a person speaking at a distance. This is a very common complaint with many persons. I am inclined to think it is sometimes analogous to myopia or shortsightedness, and only to be remedied by the patient wearing an acoustic instrument to collect more sound. The instrument should be made to fit behind the concha; it resembles a bonnet in shape, and can be had in the shops, made either of gutta percha or metal varnished. The former I prefer; and they cost only one shilling each. Of course, other instruments will be required in more aggravated cases, and under other conditions, of which I cannot speak now. I injected ethereal vapour through an Eusta-

chian catheter into the right middle ear, and ordered her to continue the mixture as before. She was rubbing tartar emetic ointment behind both ears, as recommended a few days previously.

May 8th. Hearing was still improving; she heard a watch at about two inches with the right ear, and on touching only with the left. I remarked to-day, that when she blew, the left membrana tympani was inflated considerably, but looked as if it were held within by abnormal adhesions. I this day syringed out each meatus; and after drying the parts with cotton wool, applied the dilute citrine ointment freely, as I found its application was evidently promoting the secretion of cerumen. She was continuing the tartar emetic ointment behind her ears, omitting it when the mastoid region became sore, and resuming it again when the pustules healed. Contrary to my expectations, this ointment did not produce as much irritation in her case as other counterirritants. I injected the vapour of a few drops of ether and aromatic spirit of ammonia through the Eustachian tubes on both sides.

May 10th. I told her to attend for another week. She now heard sufficiently well for her wants. Both membranes distended freely when she blew through the Eustachian tubes; they appeared thinner and less opaque, but had not recovered the normal polish, nor do I think they ever will. The general and local treatment was continued as before.

May 15th. Having caught cold, her speech was rather more indistinct than usual (her voice had acquired the harsh tone peculiar to deaf people). The treatment was continued as before. She was ordered to take the mixture after meals, instead of before, as she has been doing contrary to orders, and which has been causing purging. She said she came this morning, for the last time, to return thanks for the amount of service done her. Having injected through an Eustachian catheter, I recommended her to come once more.

May 17th. This was the last day of attendance. Her cold having passed off, the hearing was pretty good now; she complains of a little tinnitus in the morning, depending, I believe, on flatus and disordered bowels. Having again applied a little citrine ointment as before, and injected each tympanic cavity with ethereal vapour, I ordered her to discontinue all medicine, except the counterirritating ointment occasionally, and to drink a glass of the Bristol hot well water early every morning, with the object of alleviating her dyspepsia.

* 14, Westbourne Place, Clifton, July 1855.

PERISCOPIC REVIEW.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS. REPORT ON THE PROGRESS OF MATERIA MEDICA AND THERAPEUTICS.

By EDWARD BALLARD, M.D., Lecturer on the Practice of Medicine, and on Materia Medica and Therapeutics, at the School of Medicine adjoining St. George's Hospital.

NO. IV.*

PHYSIOLOGICAL OPERATION OF SEVERAL OF THE ALKALOIDS.

DR. VAN PRAAG has for some time been occupied in a series of experiments upon the lower animals, with a view to the elucidation of this subject. He has published in *Virchow's Archiv.*, from time to time, the account of his observations; and we propose to introduce into this periscope a summary of his results. The alkaloids whose action he has investigated are delphinin, veratrin, nicotin, and aconitin. His experiments in each instance were made upon each class of the vertebrata. The alkaloids which he used he obtained very pure from Trommsdorf of Erfurt.

Delphinin. Administered to dogs, cats, and rabbits, it para-

lysed the nerves of motion and sensation, and, at a later period, those of secretion; and, lastly, produced death from paralysis of the heart or asphyxia. When injected into a vein, the animals gasped for breath, in consequence of the arrest of the respiratory movements; and, in a very short time, death ensued from cessation of the heart's action. When an alcoholic solution was injected into the anus, staggering walk, adynamia, and anaesthesia, were produced. The respiration was first increased and panting; then difficult, from accumulation of mucus in the larynx; and, later, its frequency decreased, until it completely ceased. During the action of the poison, both dogs and cats exhibited signs of tickling sensations in the mouth. After death, the membranes of the brain were found filled with blood, as also the heart, larger venous trunks, and the liver. The gall-bladder was full, and there was a collection of mucus in the air-passages.

Veratrin. When a minute portion was placed upon the tongue, it was observed to be bitter, and it occasioned a persistent scraping sensation in the throat. It produced tickling of the nose and sneezing for a whole hour after the application of a similar quantity to the Schneiderian membrane. When applied to the integument, it produced a peculiar pricking sensation, with a feeling of cold in the part. A dilute watery solution of the acetate, applied to the umbilical region, produced almost immediately intolerable pain, as if the part were pierced with red hot needles. Administered to the lower animals, Dr. van Praag believes it operates much like delphinin. The respiration and circulation are lowered; the muscles lose their tone; and the irritability of many of the nerves, especially the cutaneous nerves, is much reduced. On the other hand, even very small doses induce vomiting, and often diarrhoea; though the latter more frequently arises only after larger doses. The secretion of urine is not remarkably affected, but that of saliva is greatly increased. The stage of irritation is marked by accelerated respiration and pulse, tonic and clonic muscular spasm, and increased nervous irritability. He believes the tetanic stiffening of the limbs, passing into a dancing movement of them, to be quite peculiar to poisoning by this alkaloid. Death arises from paralysis of the spinal cord. The operation of veratrin on the human subject appears, from Van Praag's observations, to be similar. The pulse is early and remarkably reduced in frequency. He found its efficacy in the relief of pain in prosopalgia, spasm of the stomach, and rheumatic lumbago, to be but temporary; but suggests its use in febrile diseases with augmented muscular tonicity, *e. g.*, pneumonia, pleurisy, and inflammatory cardiac diseases.

Nicotin. The respiratory movements are first increased, but subsequently, though sometimes at a late period, retarded; and the respiratory acts are accompanied by a sibilus which Van Praag refers to a spasmodic contraction of the muscles of the larynx. The pulse is first increased, and subsequently reduced in frequency. In those instances of poisoning which do not proceed too rapidly, severe and frequently alternating tonic and clonic spasms attack different parts of the body, either simultaneously or consecutively—a state which is followed by great debility and tremor. In rapid cases, adynamia, with tremor, may set in at once. The occurrence of anaesthesia was not constant. In all the cases, the pupils were first dilated; and in some, at a later period, contracted. The urine was unaffected, but salivation frequently occurred. Van Praag sums up its physiological action as being at first stimulant, but finally depressing, to the circulating, respiratory, and nervous systems.

Aconitin. As administered to the lower animals, Van Praag concludes that it exercises a retarding influence upon the respiration, a paralyzing operation upon the voluntary muscles, and a depressing influence upon the brain; and, as respects the circulation, he concludes that it varies greatly in the frequency with which it induces retardation of the pulse. It causes dilatation of the pupil. He regards salivation and increased secretion of urine as among the less constant symptoms of its operation. The animals died at last of exhaustion; if suddenly, it was by asphyxia.

It is to be observed, that Van Praag's observations do not in all points correspond with those of Schroff (*Prüger Vierteljahrsh. für die praktische Heilkunde*, bd. xi), who concludes, from experiments made on healthy men and on rabbits, that, in adequate doses, aconitin increases the secretion of the urine; and that the action of the heart is either immediately depressed, or after a brief period of exalted action. When large doses are given, these effects he regards as invariable.

NEW TENIFUGES: THE SAORIA AND THE TATZÉ.

The *Saoria* is the ripe and dried fruit of the *Maca Picta*, a

* Nos. I, II, and III, appeared at pp. 78, 259, and 565—on Jan. 26th, March 16th, and June 16th.