

head out. So swathed it cannot move, and one person, unassisted, can do all that is required to the eyes. The eyelids being now gently separated without pressing on the eyeball, the discharge should be wiped away, and the eyelashes cleansed with tepid water and small pieces of rag, which should be immediately burned. Next the conjunctival pouch under the upper and lower eyelid should be carefully syringed out with tepid water; for this a common pewter squirt will do. When the pus is thoroughly removed, some of the collyrium should be dropped into the eye, and diffused beneath the eyelids by moving these lightly over the cornea, or it may be injected under them with the squirt. After this the eyelids are dried, and a little simple ointment is smeared along their edges, in order to prevent the eyelashes becoming glued together.

*Counter-irritation*, by rubbing aqua ammoniæ over the temples, by tincture of capsicum, tincture of iodine, etc., is often available to relieve pain and the sense of tension.

*Electricity* has been tried in a number of diseases of the eye. Its chief successes have been in paralysis of the muscles of the eye, in asthenopia with hyperæsthesia of the retina, (for which complaint Drs. BEARD and ROCKWELL say electrotherapeutics promises more than for any other disease of the eye,) amblyopia, blepharospasm and ptosis. Dr. BROWNING, of Australia, has been most successful in treating a case of *albugo* with leucomatous patches in both eyes by galvanism. The patient, a little girl of about fourteen years, had been suffering about twelve months. The *modus operandi* consisted in using a small current of four cells, the negative rheophore, attached to a sponge, being applied over the closed eyelid, the positive placed behind the ear, the continuous current lasting from two to five minutes. This treatment was continued twice a week for about three months.

*Heat* is often of service. For this purpose small sponges may be employed, wrung out of hot water. VON GRAEFÉ was accustomed to use hot chamomile fomentations, and to apply them by means of little muslin bags, in which a few chamomile flowers were sewn up prior to being boiled. Each bag, as it was taken from the eye, was returned to the decoction to recover its temperature. Whether water or some medicated decoction is employed, it must be kept hot during the whole period of application, either by a spirit-lamp or some similar contrivance, or by additions of fresh hot liquid from time to time. As a rule, neither heat nor cold should be applied to the eyes continuously for any long time; an hour or a half hour a day will usually be enough.

*Leeches* are frequently called for to reduce congestion and inflammation. They may be applied to the temples or behind the ears.

*Setons* in the ears or the nape of the neck are too much neglected by many ophthalmologists. In chronic cases, they often bring about cures when all other means fail.

## THE EAR.

## ECZEMA OF THE AURICLE.

In cases of children Professor GRUBER has found that both glycerine and cod-liver oil, applied on pledgets of charpie, and bound firmly to the eczematous auricle, are of great value.

Dr. BURNETT recommends the following powders:

641. R. Florum zinci, ʒij.  
Aluminis, āā ʒj. M.  
Amyl, āā ʒj. M.  
For a powder.

642. R. Zinci oxydi, ʒj-iv.  
Amyl, ʒvij-ix. M.  
For a powder.

Either of these may be dusted carefully and thoroughly over the diseased auricle, and the latter should then remain undisturbed as much as possible. If the heat and burning becomes very great, cloths steeped in cold water may be applied.

In the subacute form of auricular eczema, the organ may be treated beneficially by the application of *acetum cantharidis* to the sluggish parts, and then penciling the latter with the following:

643. R. Olei cadini, f.ʒij.  
Alcoholis, f.ʒj. M.

This will often prevent the disease from becoming chronic. Should, in spite of this, however, the disease pass to the chronic stage, the best local treatment is painting the diseased parts with *acetum cantharidis*, solution of *nitrate of silver* (gr. x to f. ʒj), and the application of emollients, the head being kept dry and cool. The following ointment is also useful:

644. R. Hydrargyri ammoniati, gr. x-xx.  
Adipis, ʒj. M.  
To be rubbed in gently and thoroughly.

When the eczematous disease has invaded the auditory canal, and stimulation of the parts is needed, an ointment may be used composed as follows:

645. R. Hydrargyri ammonio-chloridi, ℞j. M.  
 Unguenti adipis, ℥j.  
 Apply with a camel's-hair pencil to the canal once or twice daily.

## OTITIS.

DR. CHARLES H. BURNETT, OF PHILADELPHIA.

In *diffuse inflammation of the external auditory canal*, if seen in the earlier stages, from four to six leeches should be applied around the ear, in front of the tragus and under the auricle, close up behind the lobule. Subsequently warm water may be constantly and gently applied to the canal by irrigation or by instillation. To relieve the pain the following solution of morphia may be prescribed:

646. R. Morphiae sulphatis, gr. viij. M.  
 Aquae, f. ℥ ss.  
 Ten drops, warm, in the ear, as required.

It may be used of this strength even in children without danger of narcotism.

The ear should be cleansed by gently syringing with pure warm water or soap and water.

When the discharge diminishes, but assumes a yellow color and dense consistence, with a tendency to the growth of granulations near the membrana tympani, strong solutions of nitrate of silver (gr. lx-c to f. ℥j) should be applied every day or two. At home the patient may use the following:

647. R. Zinci sulphatis, gr. v. M.  
 Tincturae opii, ℥ xx.  
 Aquae destillatae, f. ℥j.  
 Ten drops, warm, four times daily, in the ear.

To disperse the granulations and relieve the excoriated and swollen condition of the meatus, HINTON recommends:

648. R. Liquoris plumbi acetatis, ℥ x-xxx. M.  
 Acidi acetici diluti, ℥ ij-x.  
 Liquoris opii, ℥ xx.  
 Aquam destillatam, ad f. ℥j.  
 To apply in the canal.

In the treatment of granulations, nothing is equal to *monochloro-acetic acid*. By applying one drop of this, on a cotton holder, to the granulations every other day, they will rapidly disappear. They may also be brushed with *tincture of opium*.

In *acute catarrhal inflammation of the middle ear*, the general catarrhal symptoms should be relieved by a saline aperient and an active diaphoretic, and locally thorough inflation of the tympanum should be secured by using Politzer's air bag, the Eustachian catheter, or Valsalva's method. (See below, under Otorrhœa.) In little children we may employ, as suggested by Mr. HINTON, a piece of india-rubber tubing, through one end of which the surgeon may blow, while the other end is inserted into a nostril of the child. Should the pain become intense, leeches may be applied directly under the auricle. Anodynes may be given to allay pain. Where the fauces and Eustachian tube are inflamed, irrigation of the naso-pharynx with warm water, slightly impregnated with salt or chlorate of potash, is beneficial. Thudichum's nasal douche may be employed.

*Chronic catarrhal inflammation of the middle ear* may be either moist or dry. Both varieties require constitutional treatment by such drugs as iodide of iron, iodide of potassium and bichloride of mercury. In the large majority of cases, local treatment should be rather to the nares and pharynx than to the tympanum. Irrigation by means of the nasal douche is very important. In cases of swelling and narrowing of the Eustachian tube, inflation is indicated.

DR. EUGENE H. TRIQUET, OF PARIS.

649. R. Cupri sulphatis, gr. xv. M.  
 Mellis rosæ, f. ℥j.  
 Aquæ rosæ, f. ℥ ij.  
 Inject into the ear in acute catarrh, after the pain has been lessened by leeches and poultices.

650. R. Aloës socotrinae, āā gr. xv. M.  
 Scammonii, q. s.  
 Gambogiae,  
 Tragacanthæ,  
 Divide into fifteen pills. Two in the evening, several times a week, in the otitis of drinkers and smokers. Locally, emollient fumigations.

DR. BUCK.

This writer (*Am. Jour. of Otolgy*, January, 1880,) sums up the relative merits of the different measures most commonly employed

in the treatment of acute, circumscribed inflammation of the external auditory canal, including furuncles, as follows:

"Incisions cannot be depended upon to give permanent relief from pain or to materially shorten the course of the disease. They should therefore be only used after local blood-letting or hot applications have been faithfully tried without success, or where the appearance of the inflamed part indicates the probable formation of a collection of pus. The application of heat is preferable to local blood-letting by leeches. Of the various means at our command for applying heat to the inflamed part, the pleasantest, and at the same time the most effective, is the hot douche. In a few cases, however, the patient finds some form of dry heat more effective in relieving the pain."

## OTORRHŒA.

DR. LAURENCE TURNBULL, OF PHILADELPHIA.

The first indication is to remove the secretions. This is accomplished by the syringe and a warm solution of borate or bicarbonate of soda, one drachm to a pint of hot water. When the patient has to care for himself, it is safer to employ CLARK'S ear-douche, which acts by hydrostatic pressure, and is less apt to injure the delicate and sensitive organ.

If the pus is in the middle ear, and the opening in the membrana tympani small, the patient being unable to force the matter out by the *process Valsalva*, (namely, a prolonged inspiration, and then an expiration with the nostrils closed,) even if the operation is frequently repeated, then the physician must employ *Politzer's process*, which consists in this: Take a straight or slightly-curved tube, open at both ends, twelve or fifteen inches in length. This is introduced about half an inch into either of the anterior nares. The nares are then closed air-tight over the tube by gentle pressure with the fingers on both *alæ nasi*, prior to which the patient takes a small quantity of water in his mouth, which he swallows exactly at the same time that air is blown into the tube, which may be done by the operator having the other end of the tube in his mouth, or an india-rubber bag being attached to the tube, and compressed by the operator or assistant.

If antiseptics are needed to remove the odor, carbolic-acid solution,

gtt. v-x to f.  $\zeta$ j, may be employed. Almost all aural surgeons have agreed upon certain astringent substances which are safe and proper to use in this class of chronic cases; and among the number the sulphate of zinc is one of the best, being employed in about the strength of from one to three grains to the ounce of water. Stronger solutions of this salt are resorted to, and are all right and proper if there is no perforation of the membrana tympani; but if there is an opening in this membrane, no matter how small, it is safer, and gives less pain to the sensitive middle ear, to resort to the milder solution, not exceeding three grains to the ounce of water. The alum salts are apt to cause abscesses. Nitrate of silver, in this class of cases, is very objectionable, especially in very strong caustic solutions, unless immediately neutralized by a solution of common salt.

After the use of the astringent for four or five weeks, it is well to change it, or add a solution of two grains of *sulphate of copper* or *nitrate of lead*. If there are large granulations, the solid nitrate of silver may be applied on a probe charged with it; or a solution of sulphate of zinc, gr. xxx to f.  $\zeta$ j. Constitutional treatment is demanded in case of the strumous or other dyscrasia.

M. MENIERE, OF PARIS.

This distinguished otologist says that in all cases of otorrhœa great attention must be paid to the constitution, to correct any dyscrasia that is present. In this lies an essential element of success in all instances. *Cleanliness* is the next point, which must receive the closest care. Nothing is better than pure warm water injected from an ordinary syringe with moderate force. In the early stage, and when the otorrhea is accompanied by sharp pain, the water may be medicated with a little opium; a leech or two may be placed behind the ear; and the whole ear may be covered with a linseed-meal poultice on which a little laudanum has been sprinkled. When the pain remains very intense, hypodermic injections of morphia are the most advisable means.

In cases of long standing, warm injections are always indicated. They may be of water, or weakly medicated as follows:

651. R. Aluminis.  
Plumbi acetatis.  
Zinci sulphatis.  
Of either of these,  
Aquæ tepidæ, gr. j-iv  
f.  $\zeta$ j. M.

A little piece of wool dipped in a weak solution of carbolic acid may be placed in the orifice of the meatus after each injection. Other lotions much used by M. MENIERE are :

652. R. Zinci sulphatis, gr. xx-xxv.  
Glycerinæ, f. ʒj.  
Aquæ, f. ʒij. M.

And :

653. R. Plumbi acetatis, gr. x-xv.  
Aquæ, f. ʒj. M.

### TINNITUS AURIUM.

In those forms of tinnitus dependent on inaction of muscles, or "paralysis of the intrinsic muscles of the ear," faradism seems to be a really valuable agent. Several cases have been treated in this way at the Central London Throat and Ear Hospital, by means of Stöhrer's battery, with very marked good results. The current may be applied either direct to the membrane or over the mastoid process. According to the experience of all practicing at this hospital, the latter method is quite as efficient as the former.

At a recent meeting of the Harveian Society, London, Dr. WAKES called attention to the value of *hydrobromic acid* in aural cases of the class under consideration; and in the *British Medical Journal* of June 23d, 1876, he has narrated two successful instances of its use. Since then, other practitioners have employed it with equally good results.

Gentle pressure exercised on the external carotids will occasionally relieve this symptom.

The late Mr. HILTON stated (*Questions of Aural Surgery*, page 292,) that he had "had more success with hydrochlorate of ammonia than with any other empirical remedy—especially more than with the bromide of potassium, of the efficacy of which he had seen very little evidence." As regards the empirical action of the hydrochlorate, it is chiefly indicated on account of its "high diffusion power" in those cases in which it is desired to administer "a food to the mucous membranes." (RINGER.)

DR. LAURENCE TURNBULL, OF PHILADELPHIA.

When the tinnitus arises from pressure of cerumen upon the membrani tympani, the treatment is simply to remove the cerumen by injections of tepid water or weak solutions of soda.

Another cause is the growth of stiff hairs within the meatus. By cutting these away with a curved scissors, the affection is relieved.

Tinnitus from adhesive mucus on the posterior surface of the membrana tympani, or in the middle ear, may be removed by the catheter or by a few blasts from Politzer's air bag.

Foreign bodies in the Eustachian tube, causing tinnitus, can generally be removed by reversing the action of the air bag, causing a suction of air from the tube; or the Eustachian forceps may be used.

In pulsating tinnitus, the result of some alteration in the blood vessels, anæmia, or excessive action of the heart, we must try compression of the temporal or carotid, or the exhibition of iron, aconite or digitalis, as indicated by the action of the circulatory system.

For excitement of the brain, causing subjective noises, bromide of potassium is usually efficient.

Tinnitus from nerve exhaustion calls for phosphorus, strychnia, and the galvanic current.

The presence of the aspergillus in the ear is another occasional cause.

### RÉSUMÉ OF REMEDIES.

*Aconitum.* Drs. BAYES and TURNBULL recommend aconite in otitis, and state that it quickly relieves the pain.

*Alumen*, as a local astringent application, has a variety of uses in aural therapeutics. (F. 641, 651.) Dr. J. J. CHISHOLM considers it the best desiccating powder known. He finds very few aural discharges, however chronic, that withstand its proper application. The method employed in using it is first to thoroughly cleanse the ear, then wipe dry the passage by means of a loose cotton swab made at the end of a match or special applicator; after which puff into the ear powdered alum, *filling the drum cavity with it*. The very first application will often indicate a diminished discharge at the end of twenty-four hours. The ear is then washed out, and the alum powder again applied. This treatment is renewed once a day until the discharge is so reduced that the powder blown into the ear continues dry upon its exposed external surface. If it has crusted in the ear, it may be left for days as a hard mass, giving no pain and causing no annoyance.

*Aqua Calcis*, on account of its astringent quality, is used as a wash in discharges from the ear. It is of most service when some active inflammation is still present. (RINGER.)

*Aqua Pura.* In ear-ache, Dr. BUDD, of New York, recommends that water, as hot as the tongue can bear it, be poured into the ear. Warm water is the best of all substances for cleansing the ear.

*Argenti Nitras* in weak solution is used for injections.

*Atropiæ Sulphas*, gr. iv to aquæ f. ℥j, is an excellent remedy in otitis. A few drops of the above solution instilled into the ear, and some leeches to the mastoid process and in front of the ear, will promptly break up an acute attack. The recumbent position and perfect rest should be enjoined.

*Carbolicum Acidum.* Dr. PAULSEN in the *Monats-schrift für Ohrenheilkunde*, No. 2, claims to have met with excellent results in the treatment of otorrhœa, uncomplicated by caries or large polypi, by means of a mixture of carbolic acid or olive oil, ten parts of the former to one hundred of the latter. He has found it much more effective than astringents or other methods which he has tried, and the combination of the acid with the oil was much better than the acid with water. His method of application is to cleanse the ear thoroughly by cotton or a probe, avoiding syringing unless it is absolutely necessary, and then, dipping a tampon of cotton in the solution, to apply it to the secreting surface and there leave it till the next day, when the same process should be repeated. In this way he has succeeded in relieving obstinate otorrhœas, even when complicated by small granulations.

*Chloral Hydras.* Dr. A. LUCÆ, in the *Berliner Klinische Wochenschrift*, 1872, recommends that from ten to thirty drops of a mild solution of chloral be introduced into the middle ear by means of the Eustachian catheter and air-douche. A severe but short reaction generally follows. In the best cases an improvement of the hearing is noted after the second application. If no improvement is seen after the twelfth application, we may expect none from the use of this remedy. In ten per cent. of all cases the improvement was marked; in twenty-five per cent., slight; and in sixty-four per cent. no improvement occurred.

*Cupri Sulphas* is a valued astringent. (F. 649.)

*Digitalis* is occasionally useful in tinnitus.

*Glycerina* is an excellent emollient addition to aural injections.

*Hydrobromicum Acidum* has been successfully employed in tinnitus aurium. (Page 448.)

*Iodinium*, and its preparations have a wide field in aural diseases. In an article on the subject by Dr. DE LACHARRIÈRE, (*Annales des Maladies de l'Oreille*, July, 1876,) he states that in otorrhœa, when the discharges have had a certain duration, when the secretion seems to have its origin from the surface of the periosteum, or even in the bony tissue itself, that we should have recourse to iodine or its compounds. The author employs a solution of iodine, of which the following is the formula, and which he uses night and morning as an injection:

654. R:	Tincturæ iodinii,	gtt. xxxv.	
	Potassii iodidi,	gr. iv.	
	Aquæ,	f. ℥ij.	M.

Following subacute inflammation of the middle ear, simple engorgement of the ossicles has been observed. Left to itself, the effusion is rarely ab-

sorbed; the ossicles become less mobile, and this fixity shows itself outwardly by a great projection of the handles of the malleus. The hearing becomes more and more obtuse, and the patient suffers from musical buzzings of the most painful nature. This deafness is frequently observed in gouty people. Very often it is found useful to drop into the auditory meatus a few drops of the following solution:

655. R.	Potassii iodidi,	gr. iv.	
	Aquæ rosæ,	f. ℥j.	M.

These applications have sometimes caused a slight irritation of the auditory meatus, but they have also sufficed to bring about absorption of the morbid deposit and a return to the normal condition. Dr. L. TURNBULL states that the best treatment of incomplete deafness after cerebro-spinal meningitis is by the internal use of the iodide with the bromide of potassium, and the application of mercurial ointment behind the ear.

*Iodoformum.* Dr. CZARDA recommends iodoform as a remedial agent in those cases of otorrhœa in which the tympanic mucous membrane is thickened, swollen and hyperæmic—a condition which is due to chronic catarrh of the mucous membrane. Trachomatous growths of the mucous membrane, when small, may be treated with iodoform, but when they become large, palliative measures must be adopted, and in obstinate cases it may be necessary to resort to an operation. The iodoform is applied by blowing it into the tympanum. (*Wiener Med. Presse*, No. 5, 1880.) The following is the mode in which Professor ZAUFAI, of Prague, uses the iodoform: After having well cleansed the ears, a moderate quantity of the iodoform in powder was blown through a quill on the tympanum; later on, when the suppuration was diminished, a pellet of cotton coated with the same is introduced into the tympanum, and is left *in situ* three or four days. The cure is effected in from one to four weeks. The peculiar odor of iodoform could be masked by the addition of almond oil or tannin, or a few drops of essence of peppermint.

*Plumbi Acetas* is a favorite astringent. (F. 648, 651.)

*Potassii Permanganas*, in weak solution, forms an excellent antiseptic and slightly stimulating wash. Dr. HOWE (*Transactions of the American Otological Society*, Vol. II, Part 3, p. 359,) recommends a solution (from two to eight grains to the ounce of water) in otitis media purulenta chronica. A few drops are to be instilled into the ear twice a day, (after removal of the discharge by syringing with warm water,) and to be allowed to remain in five or ten minutes, if they cause no smarting or burning sensation. If decided inconvenience is produced, the solution is to be washed out sooner.

*Salicin.* Dr. E. H. JACKSON has found this a valuable agent in otorrhœa. (*Medical and Surgical Reporter*, April, 1876.) After the ear is thoroughly cleansed and a speculum adjusted, blow into it through a quill,

656. R.	Salicine,	gr. ij.	
	Cal. magnesiæ,	gr. iv.	M.

and insert a small piece of cotton. Should the discharge be excessively offensive, the cotton can be wet with chlorinated soda, which will tend to

