produces a mucous secretion from the anus and considerable flow of tears.

Jaborandi is a name for several different South American plants; *e.g.*, a kind of pepper Seronia Jaborandi; a species of Herpestes, belonging to the nat. order of Scrophulariaceæ; pilocarpus pinnatifolius or pinnatus of Lemaire, a plant of the Rutaceæ family. This latter appears to be the Alfovaea de Cobra of Brazil, introduced in 1873 into the Hospital of Beaujon by Dr. Coutinho.

Pilocarpine is the active principle of jaborandi. It forms crystalline salts with hydrochloric, nitric, and sulphuric acid. Hydrochlorate of pilocarpine crystallises in long radiated needles.

Pilocarpine-leaves contain also an oil—*pilocarpène*—having considerable affinity with oil of lemons.

[The first precise experiments on the topical effects of the local application of extract of jaborandi to the eye were performed by Mr. John Tweedy, of the Royal London Ophthalmic Hospital, Moorfields, at the end of the year 1874, and were recorded as an appendix to a paper written conjointly by Dr. Sydney Ringer and Mr. Alfred P. Gould, and published in the *Lancet* for January 30th, 1875 (vol. i, pages 157-159). At that time, the alkaloid pilocarpin had not yet been discovered, but the results then arrived at are identical with those subsequently obtained with pilocarpine.

After performing a large number of experiments, and carefully noting all the phenomena, Mr. Tweedy thus sums up.

"From these facts, we may conclude that jaborandi, locally applied to the eye, causes (1) contraction of the pupil; (2) tension of the accommodative apparatus of the eye, with approximation of the nearest and farthest of distinct vision; (3) amblyopic impairment of vision from diminished sensibility of the retina. These effects, however, do not last long. In my own case, the approximation of the near and far points had declared itself in a quarter of an hour, and reached its maximum in about forty minutes. It then gradually subsided, and had entirely passed off and the eye resumed its normal state in about an hour and a half."]

### Results of the Author's Experience.

*Eserine.*—Having used eserine for several years, and in all affections in which it is indicated, I may group thus the diseases in which it has been of service in my hands.

1. Various forms of corneal ulcer, especially *marginal* with suppurative tendency.
2. Cases of ulceration with perforation and prolapse.
3. Incipient suppuration of the cornea.
4. Traumatic inflammation of cornea, and suppuration of corneal wound after cataract-extraction.
5. Mydriatic states, diplopia, asthenopia, aberrations of accommodation.
6. Glaucomatous states.

I have lately used the hydrobromate for the reasons before stated, and with the best results.

*Gelsemine.*—I have used for the past year or more a neutral solution of the alkaloid (four grains to the ounce) for ophthalmoscopic purposes. I have thus avoided the inconvenient consequences both to patient and surgeon which follow the prolonged dilatation after atropine. I have had no unpleasant effects. The motor disturbance, drawn attention to by Mr. Tweedy, has been in some cases marked, and interferes slightly with the examination. So also I have noticed some slight conjunctival irritation following for a short time after instillation. But frequently within forty-eight hours, often earlier, there has been no trace of mydriasis, and I never had any complaints after the use of gelsemine for diagnostic purposes. I have had mine through Messrs. Martindale, of 10, New Cavendish Street. I have not used it for a therapeutic object save once or twice, and cannot say anything definitely.

*Duboisine.*—I have tried the sulphate of duboisine largely in all cases in which atropine is indicated. In all respects its action appears similar to that of atropine. I have compared its effects many times on the same and both eyes, in healthy and affected persons. Its effects are, as Mr. Tweedy states, more energetic and last a little longer. I have found the same beneficial action in keratitis, corneal ulcer, in inflammatory and painful states. I have used it with success where atropine has had to be relinquished from conjunctival irritation caused by the latter. Of the two, so far as my experience teaches me, save for its expense, I prefer the sulphate of duboisine to the sulphate of atropia.

*Pilocarpine.*—I have not used much of this alkaloid. I have found it less energetic in its action than eserine.

In the eyes of a patient, gelsemine was applied after complete dilatation. Pilocarpine was put into the right eye, and eserine into the left. The normal vision was $\frac{20}{20}$, and she could read No. 1 Jaeger. When the pupils were fully dilated with gelsemine, the vision was $\frac{20}{40}$, and No. 4 Jaeger. In an hour after the myotics were applied, vision = right eye (pilocarpine), No. 8 Jaeger near point, and $\frac{20}{40}$ distant point; left eye (eserine), No. 2 Jaeger near point, and $\frac{20}{60}$ distant point. In an hour and a half: right eye, No. 12 Jaeger (No. 1 with a+7 lens); left eye, No. 14 Jaeger (No. 1 with a+5 lens). In three hours and fifteen minutes: right eye, No. 14 Jaeger (No. 1 with a+7 lens); left eye, No. 16 Jaeger (No. 1 with a+5 lens). The pupils measured—right eye, 6¼ lines; left eye, 3 lines; and the near point was removed 12½ inches from the eyes. The distant vision remained $\frac{20}{40}$ in both eyes. In twenty-four hours, vision was the same in both eyes (No. 4 Jaeger, $\frac{20}{60}$ths distant point). The pupil of the right eye was about the normal size, but the iris sluggish; that of the left eye was slightly contracted. In forty-eight hours, the vision had returned to its normal standard. The right pupil was normal, but the left was still slightly contracted. While the eyes were under the influence of either of these alkaloids, the distant vision was scarcely improved by any lens.

*Atropine.*—I have here to make a few remarks on atropine, before concluding these observations. I wish to record the fact that, since I first commenced to employ it, I have never had an instance of its toxic effects. Of late, Drs. Meyer, Galezowski, and Lutand have noticed the occurrence of such, and have proposed morphia as an antidote. I have no experience to offer, as I have never had occasion to employ it. Even yet, in iritis after traumatic mischief and in many inflammatory affections, the importance of the early use of atropine is not regarded sufficiently by medical men who are not ophthalmic surgeons. Many instances of irremediable impairment of vision have occurred to me from this cause. I have tried the salicylate of atropia, and with equal benefit. I cannot say, however, that I have noticed any special advantage. The peculiar intolerance of some patients to atropine has been frequently noticed by me, and the occurrence of an erysipelatous swelling in such is not unfrequent. This is an idiosyncrasy. I have seen the recurrence of swelling, redness, and irritation, each time the atropine was used; while the same solution produced no trouble in other eyes. Here the duboisine may be of value.

Specimens of the various alkaloids, hydrochlorate of pilocarpine, sulphate of eserine, sulphate of duboisine, hydrobromate of eserine, have been sent to me to exhibit to this section, by Messrs. Corbyn, Stacey, and Co., and I have pleasure in showing them to the members.

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## ON INTRATYMPANIC INJECTIONS IN CATARRHAL AFFECTIONS OF THE MIDDLE EAR.*

By Dr. WEBER-LIEL,
Teacher of Aural Surgery in the University of Berlin.

The results of my observations during sixteen years of aural practice have forced me to give up the idea that it may be possible to cure inveterate catarrhs of the tympanic cavity by means of any intratympanic injections of medicated fluids.

1. Either the symptoms of catarrh of the tympanum depend upon extension of a simple catarrh from the Eustachian tube and the pharyngo-nasal cavity; then the latter only must be the object of our treatment. In this treatment, injections of strong solutions of nitrate of silver into the mouth of the Eustachian tube, followed four days afterwards by the use of the air-douche, will be found of the best effect. But two precautions must be strictly observed. If the dangers of vehement inflammation of the tympanum itself are to be avoided, firstly, not more than a few drops of the solution must be blown in with force by means of the Eustachian catheter; secondly, the patient must be absolutely forbidden to blow his nose till four hours after the injection.

2. Secondly, the symptoms of the intratympanic catarrh may be due not only to a catarrh of the tube, but to a *collapse of the walls* of the Eustachian canal; this collapse being dependent on insufficient or paralysed action of the Eustachian-tube muscles, as shown by me in my book on different forms of progressive deafness. The insufficient action of the muscles may be due as much to a chronic catarrh as to muscular or neurotic disturbance. If, from this cause, the tympanic cavity be not ventilated sufficiently, the result must be, I presume, the ordinary one following the rarefaction of the air over a circumscribed part of any mucous membrane. There will be congestion of blood, overfilling the superficial vessels, and a tendency to catarrhal transudation. Experiment is favourable to this view. The most cautious rarefaction of air in the tympanic cavity by means of my tympanic catheter, for the purpose of sucking out mucus from the cavity, is immediately followed by a visible intense hyperæmia of the membrana tympani; the same as you

* Read in the Subsection of Otology at the Annual Meeting of the British Medical Association in Cork, August 1879.

know results from rarefaction of air in the external meatus. A second view will, perhaps, help to explain the intratympanic hyperæmia and the symptoms of the secondary catarrh. As in the body generally, principally in the muscular parts, the motions of the members assist in the circulation of blood, so the normal and perpetual motions—undulations of the membrana tympani and of the ossicula auditûs—may aid the circulation in the drumhead. If now, as a result of chronic rarefaction of air in the tympanum, the drum and the ossicula auditûs come under the influence of greater tension, their motion will be hindered, and I imagine this other assistant factor in the circulation will be eliminated. If my explanation be correct, it is clear why intratympanic injections cannot be of any therapeutic effect in such cases. It is my experience that only in the first stage, principally in young people—collapse of the Eustachian-tube cartilages—therapeutics are efficacious against insufficient muscular action, general internal remedies being used as well as local ones. My method of galvanisation of the muscles by means of the intratubal application of the electrode I have found among the most valuable; and I have the satisfaction of knowing that in this country also Mr. Swanzy, from his own experience, has spoken favourably of its efficacy. My opinion, therefore, is that, in cases of tympanic catarrh from the cause mentioned, not intratympanic injections, but the awakening of the activity in the tubal muscles, must be the purpose of the treatment, to cause the disappearance of the symptoms of the secondary intratympanic vascular stasis and catarrh.

3. There is a third cause on which, in many cases, I believe, depend the symptoms of congestion and catarrh of the tympanic cavity: alterations of the vaso-motor and trophic nerves and of the sympathetic supplying the tympanic cavity. An illustration that such neurotic alterations take part in the origin of hyperæmia, inflammation, and chronic catarrh of the tympanic cavity, may be found in the symptoms observed in otitis intermittens, described by me eight years ago, and confirmed by the subsequent observations of Voltolini and of Clarence Blake of Boston. I wonder that such affections, which I meet with frequently, are not oftener observed by other aurists. If my observations cannot be contradicted, it must be conceded that in these last mentioned cases also no method of intratympanic injection can be of any therapeutic value against the symptoms and results of tympanic catarrh.

Now comes the question, Do you believe no method of intratympanic injections of medicated fluids to be of any use? Perhaps it may be remembered that I was the first, thirteen years ago, to recommend them. The older one becomes, the more scrupulous one is; and so, by further observations, repeating over and over again all kinds of intratympanic injections and carefully examining the results, I was forced, step by step, out of my earlier illusions. Most of the fluids injected I found to be directly noxious, especially the strong solutions of remedies, even in minute doses; and so also, as regards the weakest solutions of nitrate of silver, corrosive sublimate, and common salt, in almost all cases in which they were experimented with, I observed, immediately following, acute inflammations with perforation of the membrana tympani. From injections of weak solutions of hydrochlorate of ammonia and iodide of potassium, I cannot positively affirm I have seen any bad effects, but with just as little certainty have I seen any satisfactory result. Some years ago, I made, with one of my pupils—Dr. Acker of Washington—experiments on rabbits. Different medicated fluids were injected into the tympanic cavities by means of the naso-pharyngeal syringe. Dissection showed that in all the ears of the rabbits there had occurred an acute inflammation of the tympanum, with perforation of the membrana tympani in nearly all. There was only one medicament the solution of which even in strong doses occasioned no, or only few, symptoms of inflammation: pure carbonate of soda. This result agrees with my experiments on the living human body. Carbonate of soda is a remedy well known as a good anticatarrhal one. Though it may not be possible to say that any catarrh will be cured by it, it may, at any rate, be conceded that mucus, incrusted and transuded purulent matter, may be diminished by it. It may be agreed that tissue (false bands, for instance) and intratympanic adhesions may be softened by it; so that it would became more easy to loosen intratympanic adhesions by means of the air-douche, and further to cause absorption of hardened masses. Here, and only for this kind of catarrhal affection, I have found intratympanic injections to have a really good result. The injections, combined with air-pressure, are effected by means of my pharmaco-koniontron, described by me thirteen years ago. I hope to profit by the opportunity afforded me by Professor Jones to demonstrate my method of injecting the solution of carbonate of soda and exercising intratympanic air-pressure. I believe you will be astonished how strong solutions can be used—what power of pressure may be applied, not only without any harm to the patient, but often even with immediately consequent amelioration of the symptoms.

# FORTY-SEVENTH ANNUAL MEETING
OF THE
# BRITISH MEDICAL ASSOCIATION.

*Held in CORK, August 5th, 6th, 7th, and 8th, 1879.*

## PROCEEDINGS OF SECTIONS.

SUBJOINED are abstracts of the papers presented to the several Sections at the annual meeting, and of the discussions thereon.

### SECTION C.—OBSTETRIC MEDICINE.

*Wednesday, August 6th.*

THE following was accidentally omitted from the report of the discussion on Intra-uterine Medication in last week's JOURNAL.

Dr. BYFORD (Chicago) said the condition which usually called for intra-uterine medication was one in which there was general hyperæmia and more or less hyperplasia of all the tissues of the uterus—the mucous, fibrous, and vascular. The vessels and glands of the mucous membrane were enlarged, and the whole organ was bulky. Menorrhagia, metrorrhagia, and leucorrhœa, one, or in many instances all of them, were symptoms of this condition. When examined, the cervix would be found engorged, and sometimes its surface abraded to a greater or less degree, and the cavity enlarged. This state of things many times dated from confinement at full time or abortion. The local remedies most beneficial, whether there were hæmorrhage or not, were such as powerfully stimulated the nervous and vascular systems of the organ. The vascular and nervous apparatus of the cervix and body were intimately associated with the vascular system, if brought under the influence of the same portion of the vaso-motor nerves. Dr. Tilt had very correctly stated that many of these cases, particularly the less grave varieties, might be, and often were, cured by making repeated strong impressions upon the cervix by local applications. This had repeatedly occurred in Dr. Byford's hands, and was the treatment relied upon before intra-uterine medication was so freely used as now. A strong stimulant, applied to the vaso-motor nerves of the cervix, influenced the circulation of the whole organ. All this was no argument against properly conducted intra-uterine treatment; and he believed most cases, such as he had described, could be cured more promptly by resorting to it. He had not for many years injected medicine into the uterine cavity, because he thought it attended with risk to life; and quite certainly it caused great pain. With those who had spoken before, he thought the fluid form the best, and the application of it by means of the swab the most appropriate method of using it. The kind of medicine to be used must be regulated by the susceptibility of the patient, as well as by the intensity and extent of the disease. To begin, he generally preferred the tincture of iron. The use of this two or three times habituated the patient to such impressions, and enabled us to make stronger applications with impunity. Then, if the mouth of the organ were patulous and the case were a hæmorrhagic one, strong nitric acid, applied carefully to the whole inside of the body of the uterus, would be of great service. If the application were as mild as the tincture of iron, it ought to be repeated every five or six days. If strong acid were applied thoroughly once a month, and that not more than three days after the cessation of the menstrual flow, when it was desired to make a strong application, the patient should be confined to her bed for one or two days, or until all pain and inconvenience subsided.

*Thursday, August 7th.*

THE Chair was taken by GEORGE H. KIDD, M.D., President of the Section.

#### HÆMORRHAGE FROM THE GENITAL ORGANS DURING PREGNANCY AND PARTURITION.

A discussion on this subject was opened with the following paper.

*Hæmorrhage from the Organs of Generation during Pregnancy and Parturition.* By A. V. MACAN, M.B. (Dublin).—The points which the author proposed for discussion were: 1. Menstruation during pregnancy; 2. The symptoms or conditions that justify, in a case of threatened abortion, the giving up of all further attempts at saving the ovum; 3. Imperfect abortion and its treatment; 4. The treatment of placenta prævia; 5. The prevention and treatment of *post partum* hæmorrhage, including that described by Gooch as "a peculiar form of hæmorrhage". After giving briefly the views generally held about menstruation during pregnancy, the author noticed at some length the opinion held by Professor Spiegelberg of Breslau, that all so-called menstrual discharges were nothing but hæmorrhage from pathological