so unusual, but offers quite a contrast to the previous one, and shows that I have reason to know that one or two doses of salvarsan do not always cure a patient of syphilis.

Mrs. B., aged 35. Had been married for ten years and has had a skin disease ever since she was a baby—was told that she had scurvy. She has had five miscarriages and two other children that only lived a few days each. Husband was always healthy until married, but has had the various symptoms of syphilis since his marriage.

I saw Mrs. B. first on January 9, 1912, when she presented the appearance of a bad case of psoriasis very generally distributed over her body and face, her nose especially being affected. The little finger on her right hand had lost its nail and was scarred and drawn until she could not bend it.

Mr. B. showed a few tubercular syphilide over his arms and legs. I had a Wassermann test made on both of these people and Mrs. B. showed positive XXX, while Mr. B. showed positive XX.

January 12, 1912, I gave Mrs. B. a full dose of salvarsan, after which I gave her inunctions of mercury for eleven days, followed by another dose of salvarsan on January 24, 1912.

I gave Mr. B. one dose of salvarsan on the 13th of January, and then ten inunctions of mercury. These patients had both been drummed to another physician when they arrived in Hot Springs, and as I did not get them until their stay was half over I had to hurry the treatment more than I would otherwise have done.

Both patients left Hot Springs February 1, 1912, entirely cleared up and in good condition.

November 2, 1912, Mrs. B. gave birth to an apparently healthy baby, which has never been seriously sick and does not show any symptoms of syphilis.

In August, 1913, Mrs. B. began breaking out again and she arrived in Hot Springs on September 30, 1913, with a squamous eruption over her face, arms and legs. Her Wassermann showed a XX positive.

She brought her baby with her and on its first birthday it was able to stand alone and take a few steps without falling, seemingly normal in every way.

When one takes into consideration the number of miscarriages this woman had had with the death of two children soon after birth, I think that this baby offers an interesting history considering the short time the mother was treated and her subsequent relapse.

NASAL TAMPON TREATMENT OF SINUS DISEASES AND OCULAR COMPLICATIONS.*

By J. IVIMEY DOWLING, M.D.,
Albany, N. Y.

In the *Homoeopathic Eye, Ear, Nose and Throat Journal* for June, 1910, I published an article under the title, "Nasal Tamponades, an Original Method of Treating Ocular Diseases." This was a brief description, with citation of cases, of a method purposing to drain the accessory nasal sinuses and thereby influence inflammatory conditions of the eyes.

In *Ophthalmology* for April, 1911, appeared a brief paper, entitled "The Relation of the Anterior Ethmoid Region to Diseases of the Eyes," in which I endeavored to emphasize the importance of that special area to diseases of the eyes and report clinical cases benefited by operation, the results supporting the view that the anterior ethmoid region is an important factor in causing many ocular diseases.

The first describes a simple method, applicable by any one familiar with intranasal anatomy and able to employ a nasal speculum and place a tampon *under full illumination with the aid of artificial light*. The second paper suggests surgical methods for the purpose of affording satisfactory drainage to the frontal and maxillary sinuses and anterior ethmoid cells. Only the skilled specialist should attempt surgical interference, but the nasal tamponades may be used by a much greater number, and therefore should have a much wider field of usefulness.

In the *New York Medical Record* for September, 1890, Quinlan reported a death after an operation upon the middle turbinated body and ethmoid cells. I have had two deaths after removing the middle turbinated bodies, opening the ethmoid cells and sphenoid sinuses at

*Read in Section on Ophthalmology, Rhinology, Otology and Laryngology of the Southern Medical Association, Lexington, Ky., November 17-20, 1913.

the same operation. Ballenger has reported such disaster and others have done the same. These disasters are mentioned in order to illustrate the possible dangers attendant upon ethmoidal surgery and emphasize the need for some less radical measures. Such method I believe I have succeeded in elaborating after an experience in treating over two thousand cases by means of properly placed cotton tampons saturated in a solution of argyrol, forty grains to the ounce.

The cases in which I have obtained marked results are those affecting the optic nerves, retinal and choroidal diseases, affections involving the iris, conjunctival and corneal diseases, muscular errors and conditions of erratic refraction in which glasses are frequently changed, but without material benefit. This latter state is one of the chief indications that should lead to investigation of the nose and accessory sinuses, for diseases of those parts will so alter the refractive indices of the media that no correcting lenses will be long tolerated to the satisfaction of the patient. However, whatever correcting lenses have been primarily correct will be the ones accepted by a patient after a course of treatment by intra-nasal tampons, and I wish here to state that drainage of the accessory nasal sinuses by my method will so restore the normal refractive indices of the media that it becomes the part of wisdom to investigate the nose and sinuses in all cases of difficult refraction, and many such cases can be restored to comfort and a single pair of glasses in lieu of the half dozen pairs they will occasionally be using.

My method and theory were well described by Dr. Wm. S. Manning, who presented a paper before this society last year. Since that time I have continued my observations and satisfied myself still further as to the correctness of my original claims. In addition I have had radiographs made for the purpose of graphically depicting the actual location the tampons should occupy. These tampons are rendered visible by incorporating bismuth paste in the fibers of the cotton. From my

plates I have selected two radiographs that serve, better than words, to emphasize the essentials in the proper use of intra-nasal tampons.

The first picture that I wish to show you merely illustrates the correct path a probe must take in order to enter the sphenoid ostium, and this I term the *sphenoid direction*. The next picture illustrates what I term the *infundibulum direction*. An understanding of these two directions is essential to the proper placing of the tampon. The first is the primary direction employed and the second is the final step in the operation.

The first step can usually only be approximated because the middle turbinated body is generally too large to permit the placing of a tampon direct to the ostium of the sphenoid. The latter step can generally be accomplished, and I have found it the absolute *sine qua non* in the placing of the tampons in order to achieve full success.

The tampons are made from sterilized long fiber cotton wound about a long, thin wire-like applicator. This particular style of applicator and kind of cotton are essential in order that a long tampon may be properly placed by the gentle withdrawing of the applicator.

To make the tampon the necessary quantity of cotton should be flattened and stretched to the required thickness and length, then the probe should be taken in the right hand and the cotton held on the flat of the left hand. The applicator is then placed upon the middle of the cotton, which is then folded toward the body and over the wire and held in place with the thumb. The probe is then turned from left to right, or away from the body. The next procedure is to introduce the cotton tampon into the naris, giving it the sphenoid direction, pushing it as far back as possible between the middle turbinated body and septum. After the tampon is properly placed, the wire is slowly withdrawn by giving it a twist from right to left, and at the same time giving a slight upward shove to the tampon in order to engage and hold it as high in the nose as

possible. When the applicator has been sufficiently withdrawn, the handle is depressed until the wire is almost in contact with the upper lip and the tip pointing toward the infundibulum, then a final push is given in order to engage the tampon as nearly as possible in the vicinity of the infundibulum, after which the wire is finally withdrawn, leaving the tampon in its proper position. Before introducing the tampon, the nose should always be inspected in order to determine the width of the nares and the presence of any irregularities, for the tampon should be of such size as to reach from the anterior nares to the choanae posteriorly and of only such thickness as will permit a snug fit without undue discomfort.

The tampons should always be placed in both nostrils, for while one side may be more involved than the other, it is seldom that one side alone is affected, although symptoms may only be referred to but a single side.

It is necessary to leave the tampon in place for from ten minutes to an hour. The use of cocaine before placing the tampons is seldom required and should be avoided if possible, as best results are obtained without its preliminary use.

The technique to be followed after withdrawing the tampon is thoroughly flushing the nares and cleansing them of all secretions. The method may be either by post-nasal or intra-nasal douching by means of the ordinary post-nasal curved tip or Teets' anterior nasal tip. In lieu of that a douche obtained by means of compressed air is satisfactory.

After thoroughly cleansing the nasal chambers a bland oil may be employed, although in some cases the use of oil seems to prove too drying and militates against the usefulness of the tamponade treatment.

INDICATIONS.

My method of treatment by nasal tamponades is indicated in corneal diseases, conjunctivitis, iritis, diseases of the retina and choroid and affections of the optic nerve, erratic refractive states and some muscular anomalies

of spasmodic nature; also acute or chronic affections of the nose and sinuses. In addition inflammations of acute and chronic nature affecting the Eustachian tubes, middle ears, pharynx and larynx are materially benefited by this method of treatment.

EFFECTS.

The results obtained through this treatment are immediate and remote, pleasant and disagreeable, and are also of subjective and objective kind. The immediate effects are suffusion of the conjunctivas, lachrymation, an increase of an already existing conjunctival con-

Illustration No. 1, showing the sphenoid direction, which is the primary position the cotton tampon should assume.

gestion, sneezing and flow of mucus from the nose. Intra-ocular and tympanic congestions are lessened and visual acuity may be rendered more acute. Tinnitus is frequently lessened or controlled for a time.

That actual drainage of the sinuses is accomplished is well demonstrated in occasional cases of acute nature in which the maxillary sinuses are sufficiently filled with hyper-secretion to overcome the light reflex incident to transillumination, for subsequent to a treatment these sinuses will actually show a positive degree of illumination. Of course, in chronic

cases which have progressed to actual empyema, no such effect is noted, for the reason that the mucous linings are too greatly thickened to permit transmission of light rays until after many treatments, or operation has been instituted.

Another most satisfactory immediate effect is the lessening of radiating pains which may have involved the ciliary nerves or various branches of the trigeminus. Headaches, which are described as frontal, vertical, occipital or of the entire cranium, are frequently promptly benefited after one or more treatments.

The disagreeable effects are occasionally most positive and may be noted as a decided turgescence of the erectile tissues of the nose, increase of pains, vertigo and nystagmus. I

entirely by the length of time the induced effects persist, and daily treatments may be necessary and again treatments should be but once a week or even less often.

CONTINUANCE OF TREATMENTS.

A single treatment is often sufficient for the cure of acute head colds, while for the more chronic conditions of the eyes or sinuses, the treatment may be necessary over a period of months or even for several years. The length of time that these treatments may be continued is but evidence of their virtue, for many heretofore progressive diseases of the eyes are rendered stationary while this method of treatment is continued.

Disease of the eyes or sinuses that are benefited but not cured through this treatment will often respond to operative interference, after which further use of argyrol tampons will establish a satisfactory result.

VALUE AS DIAGNOSTIC AID FOR INFECTION AND

INDICATION FOR OPERATION.

The laboratory researches of Dr. Charles E. Terry, of Jacksonville, Fla., indicate the value of the argyrol tampon as an aid in diagnosing hidden infections of either acute or chronic nature, for in the presence of pathogenic organisms there is a distinct bleaching of the tampon which will change from its normal dark brown color to a yellowish tinge or even be fully decolorized. This fact is of importance in determining the advisability of operating upon the ethmoid region or sphenoid sinuses. In the event of progressive disease of the optic nerves or other ocular diseases, in which radiographs seem to indicate normal sinuses, and though the pictures show clear, large sinuses, there may yet be sufficient residual infection to influence the progress of ocular diseases; the membranes being infected to the point of saturation, with resulting otitis of proximate parts. This condition I have observed in a sufficient number of cases to lead me to state it as a possible cause for some otherwise inexplicable ocular diseases of progressive nature, and in lieu of "idiopathic

Illustration No. 2, showing the infundibulum direction, being the position finally assumed by the cotton tampon before the probe is withdrawn.

have seen these last two symptoms of such severe nature that the patient would be unable to walk without aid, and indeed would fall if left unsupported. These aggravations are not greatly lessened by the use of cocaine, but must pass off gradually, and seem to yield most satisfactory to rest alone.

FREQUENCY OF TREATMENTS.

The frequency of treatments is governed

cause," such origin should be considered in the presence of positive bleaching of the tampons. Furthermore, a positive reaction obtained in progressive diseases should suggest the advisability of operation, providing some improvement is observed through the use of tampons employed as a therapeutic measure, and this despite the negative result of the radiographs.

THEORY AS TO ACTION.

The theory advanced as to the benefits from this method I have stated in a former paper as follows:

"The theory which the writer has evolved and which seems to be proved through results obtained in practice is as follows: The nasal accessory sinuses at some time or other have become infected with some pus-producing organism. The germs may remain dormant after the case is apparently cured, without occasioning any particular symptoms. Subsequently the patient becomes weakened through some systemic disease or the eyes overstrained through excessive use or the wearing of incorrect lenses; the eyes then become the point of least resistance. Some exciting agent may occasion excessive flow of mucus within the accessory sinuses thereby completing the needs of the laboratory; namely, equable temperature, moisture and proper media for the development of germs, and through the germs' development toxins are produced which enter the circulation through the lymphatics or the blood currents and in such a way occasion metastatic inflammations. In some instances it is the toxins and in others actual infection through the germs themselves. In the one instance there is inflammation with plastic exudate, in the other actual abscess formation. In the one condition we may have plastic iritis, in the other corneal abscess. Again, we may have simple irritation of the nasal nerve as it passes through the ethmoid regions, and this through the relation to the lenticular ganglion and the long ciliary nerves and infratrochlear nerve may occasion the erratic muscular troubles which already have been noted. Usually there is a spasmodic blurring of the eyes at some time. These conditions are frequently put down as ciliary spasms, but in truth they are nerve disturbances of toxic origin. Their cure may readily be obtained by employing the methods herein described by the author.

"A theory which has seemed to prove practically is that diseases of the eyes which have been

dependent upon complicating states of the nose or the accessory sinuses are more amenable to treatment when staphylococcus infection alone is present. Cases in which mixed infection is evident are amenable to improvement and sometimes cure, but are more prone to relapse. Those cases in which pure streptococcus infection is present are most grave and are only amenable to operative methods and are likewise apt to prove progressive with ultimate serious result upon the vision; in some cases actual blindness is the final outcome.

"Furthermore, organic changes may ensue as the result of any of these infections. Reabsorption of exudate is observed in the simple staphylococcus infection; partial absorption in mixed infection but in pure streptococcus infection there is definite destruction of tissues. In these latter cases the disease may be stayed in its progress, but positive cure is rarely possible. Thus far I have never encountered pneumococcus, but in the light of its known virulence I believe metastatic diseases of the eye which might arise from such infection would prove to be very malignant and probably impossible to cure."

In addition to the above, I am very pleased to emphasize the part the lymphatics merit for the benefits upon the eyes and other proximate parts observed after placing a tampon saturated in argyrol within the nose. Through personal letter to me and published correspondence in the October number of the SOUTHERN MEDICAL JOURNAL, Dr. I. L. Van Zandt, of Fort Worth, Tex., has well expressed the idea as follows: "I would suggest that the argyrol is taken up by absorption from the nasal passages, and is carried by the lymphatics to the diseased eye, and there does its work."

AUXILIARY TO OTHER TREATMENTS.

My deductions have resulted primarily from cases treated without other aid except in cases requiring mydriatics or myotics and in these instances the use of argyrol tampons enhances the effects of such preparations.

The following reports taken from cases will serve to illustrate and emphasize some of the virtues claimed for this method of treatment.

CASES WITH PRIMARY AGGRAVATION AND ULTIMATE BENEFITS.

Mrs. A. M. P., age 62. During spring of 1913 suffered severe attack of grip, from which there was a gradual partial recovery. Glasses that had

been comfortable were no longer pleasing, as everything near or distant seemed to be blurred. For distance she was using O.U.+1.25 Dsph, and for near purposes O.U.+4.50 Dsph.
 V—O.D. 20/200+2.50 Dsph=20/15.

O.S. 20/200+2.50 Dsph=20/15.

and with O.U. 5. Dsph Jaeger No. 2, could be read at 10 to 12 inches. The ophthalmoscope showed a diffuse haze of vitreous in both eyes and the retinae were clouded, but otherwise the intraocular parts were negative.

Transillumination—All sinuses negative except ethmoid cells which showed dark. The intranasal parts were somewhat irregular because of septal spurs and the erectile tissues turgescient with a thin watery discharge from the regions of the infundibula. Other symptoms complained of were tinnitus, painful cough, sneezing, severe pain in vertex and occiput with stiffness of the neck.

This was a case of pan-sinusitis with a mild type of serous rethinitis and Eustachitis. Primary treatments with argyrol tampons occasioned three days' aggravation in which all pains were more severe, stiffness increased in the neck and vision more blurred. After three days there was a gradual subsidence of symptoms and general improvement. At the next treatment the same aggravations were observed, but continued for a less time and were less severe. In addition to the argyrol treatment an iron tonic was prescribed. After five treatments over a period of six weeks this case was discharged and the original glasses were continued because no others were as satisfactory.

Mrs. M. E. S., age 29. Consultation for relief of moist blepharitis marginalis, which had resisted the usual methods over a period of seven years. Vision was normal. O.U. 20/20 and no intra-ocular condition was evident. Transillumination showed all sinuses clear except the ethmoids. The intranasal parts were negative except for turgid middle turbinate bodies.

Primary treatments induced all the symptoms of a severe head cold, which passed off after a few days, but were repeated after the first two treatments. Mercurial ointment had been in use for years and was not discontinued, as it served to afford relief in the mornings after night's sleep. Five treatments over a period of two months served to effect a cure.

Chronic Headache.

Mrs. I. F. D., age 32, and Mrs. G. A. H., age 43. Both suffered from childhood with headache unrelieved by glasses or general treatment. The former patient was treated at intervals from February 15, 1913, until July 9, 1913, with resultant cure. The

latter patient has had two treatments and obtained the first benefit she has ever experienced, having gone for several successive days without headache.

Rhinitis Habit.

Many cases state that they catch cold upon the slightest provocation irrespective of season. At such times eyes are always affected and glasses of little use. Mrs. E. A., age 31; Miss Mae D., age 42, and Mrs. G., age 62, are cases in point and illustrate the benefits to be derived from my method of treatment irrespective of age. In these three cases glasses were frequently changed, for the refractive states seemed to be variable. Treatment has lessened the tendency of head colds and the refractive states have become constant so that changes are no longer necessary and will not be except as the requirements of age necessitate.

Recurrent Iritis.

One case will suffice, as it was of intense nature and a most unfavorable prognosis had been rendered. Mrs. H. A., age 34. First consultation July 5, 1912. History of repeated attacks of iritis. Vision at that time was O.D. 20/30, O.S. 20/15. Severe iritis was present in right eye and left eye negative. Sinuses all clouded by transillumination. Spots before eyes quite constant. Severe attack of irido-cyclitis ensued in both eyes and progressed to state of blindness except for large objects and light sense. Mydriatics and argyrol tampons resulted in successful issue, and at recent consultation V.O.D. 20/10, O.S. 20/10, and no subjective discomfort is present. Without mydriatic no glasses are tolerated and patient uses eyes without any sense of discomfort.

Optic Neuritis Tending to Optic Nerve Atrophy.

Four cases will serve to illustrate the diagnostic value of argyrol tampons in establishing the presence of infection within the nose and adjacent sinuses.

Miss Agnes M., age 19. Consultation April 26, 1912. History, rapid loss of near vision preceded by many attacks simulating hysterical blindness. Vision on day of first consultation, O.D. 20/200, O.S. 20/200, which was momentary, being replaced by positive blindness from moment to moment. The vitreous chambers were clouded, but the optic disks could be studied and were ischaemic. The visual acuity was improved by plus cylinders axis 90 giving 20/70 for each eye, but this, like the uncorrected vision, was momentarily replaced by blindness. Radiographs were indeterminate. Tests for infection by means of argyrol tampons were positive; that is, the tampons were bleached. Operation was advised and instituted, the middle turbinate bodies being removed, ethmoid cells

opened and sphenoid sinuses trephined. The interiors of sphenoid sinuses were found necrotic. Vision rapidly improved, and at consultation on October 16, 1913, V—O.D. 20/15, O.S. 20/15. Examination with the ophthalmoscope, both eyes negative except for mass of opaque nerve fibers in right eye. The case is now cured and requires no lenses to improve vision, although weak compound hyperopic cylinders are accepted.

Mr. H. S. B., age 37, gave a history of frequent blindness since age of 15, becoming of daily occurrence just previous to consultation on January 17, 1913. Vision then equalled O.D. 20/70, O.S. 20/70. Radiographs showed clouding of maxillary sinuses, ethmoid cells and sphenoid cells. Test for infection by argyrol tampons positive. Operation similar to first case resulted in restoration of normal vision and subsidence of symptoms. Sphenoid sinus walls were necrotic.

O.D. 20/15+25 Deyl axis 90=20/15. On June 27, 1913, vision=O.S. 20/30+.75 Deyl axis 90=20/15. No abnormal signs were then present nor have since presented.

Mr. M. H., age 57. First consultation May 10, 1913. History, sixteen months previous noticed a rapid loss of vision in right eye, which at end of few months was total except for peripheral fields, and this despite the usual treatments on the supposition that the case was specific. The ophthalmoscope showed pronounced paleness of optic nerve in right eye and decided neuro-retinitis in left eye. Vision of O.D. was light sense only and of O.S. 20/30 much clouded. He had been told he was suffering from optic nerve atrophy.

Tests by argyrol tampons revealed infection and operation was advised without waiting for radiographs. The usual operation was performed and sphenoids found necrotic. On November 15 the vision of O.D. was 20/50 and O.S. 20/20.

A case that may well be included under this head was treated by my assistant, Dr. A. C. Worth. The result was brilliant, and the history as follows:

Mr. J. J. D., age 27. In April, 1912, suffered from railroad accident, being thrown from a train and sustaining head injuries which necessitated a stay of twenty-two days in a hospital at Rochester, Ohio. Shortly after regaining consciousness he noticed vision of left eye was impaired. This rapidly grew worse until at time of consultation, on November 18, 1912, the vision of O.S. was 5—Nasal Tampon Treatment of Sinus Diseases 20/100. That of the O.D. was normal. The findings of the ophthalmoscope seemed to warrant a diagnosis of optic nerve atrophy. The optic disk was very pale and the vessels all much contracted.

Except for the occasional use of cathartics, the only treatment employed was that of intra-nasal tamponades saturated in argyrol (40 grains to the ounce). At first daily treatments, and later less frequently. On January 3, 1913, central vision had improved to the degree of 20/30, although the visual field is contracted and a number of scotomata are present.

In all these cases treatments by argyrol tampons was continued after operation and in all the sphenoid sinuses assumed a healthy state. Anti-syphilitic treatment was purposely avoided. No specific history was elicited and no tests made, the patient's statements being accepted as sufficient to warrant treatment along the lines indicated.

In closing, I wish to reiterate that this method of treatment is valuable in many diseases of the eyes either alone or as an adjuvant to other treatment.

Also that as a diagnostic aid in determining hidden infection it is unequalled and a *positive reaction even in the face of negative radiographs is sufficient to warrant operation in certain types of progressive diseases affecting the deeper ocular tissues.*

Finally, I wish to emphasize my belief that no negative report upon the state of the nose or condition of the sinuses should be made until a test has been instituted by means of intra-nasal argyrol tamponades, for their use will frequently reveal hidden infections that would otherwise escape the observer's attention and the presence of which may be an active agent in causing not only optic nerve affections, but metastatic inflammations of the entire uveal tract.

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DISCUSSION.

Wm. S. Manning, Jacksonville, Fla.—This treatment of Dr. Dowling I have used for five years on at least a thousand cases. I know of no other method of office procedure for general nasal troubles that gives such good results. When the ordinary methods of transillumination do not show anything, in cases of that sort you can certainly get results with the nasal tampon. Dr. C. E. Terry, of Jacksonville, made the contribution of the bleaching of the argyrol tampon.

I have had patients come to me with these headaches to be almost uniformly relieved with the tampon, and it is only naturally popular with the

patients. I have gotten good results in conjunctivitis. The depletion seems to very much aid in the clearing up of conjunctivitis and as an aid to eserine in glaucoma. Some of the cases were probably due to toxemia. I never use cocaine in the nose in any cases. I find when I use cocaine previous to putting in the tampon I get almost no result, because a large part of the efficacy of the tampon is because of the irritation of the cotton, setting up a drainage. If the patient sneezes, you get much more relief.

Dr. Bledsoe—Do you find many patients object seriously to the tampon?

No.

J. Ivimey Dowling, Albany, N. Y.—In regard to the use of the plain cotton tampon inducing sneezing. The sneezing is not an irritation due to the cotton alone, but is the result of the irritating effect of the induced capillary drainage. This may be readily proved by using the two methods upon the same person, for you can put a plain tampon of cotton and not induce sneezing, but the argyrol tampon will.

Since I have used this method of treatment I have used Bowman's lachrymal probes less than formerly for epiphora results because of obstruction to the lachrymal canals in the lower third as well as the upper two-thirds of the canals. The obstructions in the lower third of the canals usually result from a soft stenosis or turgescence that is readily overcome by argyrol tampons. Strictures in other parts of the canals are best overcome by use of negative galvanism applied through the use of properly selected Bowman's probes.

As to the length of time the tampon should be left in situ for the purpose of diagnosis, it depends upon the circumstances in the case. In active infections the tampon will bleach almost instantly, but in the more chronic conditions ten, fifteen or twenty minutes may be required before positive bleaching will be observed.

A Member—Is the pain very severe?

Dr. J. Ivimey Dowling—Only in those cases cited. The patient I had in mind when I spoke of vertigo following the removal of the tampon is a doctor with a very large practice. Two or three days following this treatment she began to get relief, relief such as she had never had before, and now she is practically cured.

A Member—From depletion or antiseptics?

Dr. J. Ivimey Dowling—Dr. Van Zandt has suggested that the benefits resulting from argyrol tampons are due to its absorption by the lymphatics, and this is likely true, so that I am willing to concede the virtue of argyrol as an antiseptic, but also wish to emphasize its special virtue because of the depletion induced by the affinity of this colloidal preparation with the colloidal products of disease and also because the specific gravity of the solution I advise approximates the specific gravity of the nasal discharges.

A Member—How long do you allow the tampon to remain in the treatment of an acute cold?

Dr. J. Ivimey Dowling—That depends on the patient. In highly nervous patients I allow them to remain ten to fifteen minutes; with a phlegmatic patient it may remain half an hour.

A Member—Never used glycerine?

Dr. J. Ivimey Dowling—I never used glycerine, for I long since tried it in combination with argyrol solutions and failed to find it an added benefit.

SOME OBSERVATIONS ON PELLAGRA.*

By J. E. EVANS, M.D.,

Fulton, Ala.

In addition to a systematic study of malaria, its cause and prevention, we extended our microscopic and bacteriological investigations to clinical and cultural observations of several diseases of known and unknown cause, among which were: Pyogenic infections, pneumococcal disease, various types of diseases and manifestations caused by the common group of colon bacteria, including Shiga's bacillus, syphilis and pellagra. For the last two years I have observed that the homes of all pellagrins coming under my observation were infected with cockroaches.

Early last spring I collected many specimens of these insects from various sources and studied them very closely. They were of the common household genus, *blatta orientalis* infesting Southern homes, especially along the seacoast. These insects are said to have been imported into this country from India through the Levant. These insects are household pests of omnivorous and nocturnal habits. Their presence in the homes of pellagrins and the peculiar, offensive odor produced by them in pantries and on provisions over which they feasted, led me to investigate their causal relations to pellagra. I incubated them, dissected and examined cultural growths from their intestinal tracts, but was never able, even by feeding and injecting cultural growths into animals, to convict them of causing the disease in question. However, I did find them to be natural incubators and carriers of teeming millions of bacteria of the colon group. I studied and experimented with various corn products and molds common

*Read before the (Clarke County (Ala.) Medical Society, November 16, 1913.