the results were always unfavorable. Dr. Biggs, to whom I always write regarding my serums and whom more than any one in America the profession should thank for his work in these lines, looks on these results as to be expected at this time. For example, the bacilli of tetanus multiply with such astounding rapidity that truly enormous amounts of the antitoxin should be used and in increasing ratio. As I used in proportion such small quantity the result otherwise could not be expected. Time will show us why this serum should give such good results in some conditions and failures in others; at present the theory of Biggs is the best propounded and should be accepted.

THE ANTIPNEUMONIC SERUM.

The last of the serums used by myself has been the antipneumonic serum. Now in my cases I chose the ones that I felt were somewhat hopeless—for instance, an infant who had suffered from measles and then from pneumonia. My second case was somewhat similar. Two instances were croupous pneumonia, simple—that is, with no complications—the others were pneumonia with pleurisy or bronchitis. In all there were nine cases. All good results. That is, all recovered; some may have taken longer than others, but such cases as pneumonia and measles I considered so very unfavorable that, since they had recovered, no matter how long the time, I was brought at once into the camp again of the serum-therapist. Then came a case of croupous pneumonia in an alcoholic. What now? My experience had been so uniformly unfavorable with this class of cases that I was glad indeed to have a remedy (?) on which I could place some little reliance. To this case I called Dr. J. C. Wilson, who has had a greater experience than mine with this serum. We used it according to the methods in vogue and used it fearlessly. After the ninth bottle (each one contains 20 c.c.) I desisted, and Dr. Wilson (we were making daily consultations) coincided. Now, in this case, the serum demonstrated its utter failure. We both knew all about the remedy and how to apply it. Why should it fail? This is one of the remarkable peculiarities of serum treatment. The remedy in many instances refuses to act. Wherein the trouble lies I have not been able to see or learn.

CONCLUSIONS.

This much I can say as a conclusion:

Diphtheria antitoxin is a specific and its standing is assured. It is only in exceptional and very, very rare instances that failures are to be seen, and this may be the result of the operator even as of the remedy.

Marmorek's serum is erratic and not to be depended on. It may be harmless as the originator asserts. Experience has also demonstrated this. If the method of its originator be followed in its application a favorable result or an unfavorable result may be equally expected. I think the failure of this remedy should be sought in the very original streptococcus used in the make of the serum. If this be found, and then the disease be isolated as well as the germ, we may have the same uniformity of results as in diphtheria. But so long as septic diseases depend on many germs, one germ in particular can not immunize.

I think the same failure results in pneumonia. Where the infection is mixed, failure results, not so much by reason of the remedy in the strepto-infection, but because the disease is complicated and the complication should require an especial addition to the serum, and this should be especially known. As long as this is uncertain so long should the rule be: Serum therapy

should be applied under special conditions, and for special indications, and not empirically, as I fear the diphtheria antitoxin is being given.

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DISCUSSION.

DR. J. P. CROZER GRIFFITH, Philadelphia—At the time of the first interest in tuberculin a commission was appointed by the University of Pennsylvania to test its value. The investigation was carried on with the greatest precision and attention to systematic detail. It was my province to examine frequently the condition of the lungs in the patients under treatment. There was no case in which any decided alteration for the better was observed; and I am sure that in one case, which had for months been quiescent, the results were absolutely disastrous.

DR. A. C. CORTON, Chicago—I wish I could share the optimistic ideas of the essayist, but my experience with antitetanus serum has almost convinced me that its effect is practically *nil*. The fact that we treat a case of tetanus with serum and it recovers is little proof of the efficacy of such treatment. All of us who have seen many cases of tetanus, or who have watched the reports of such cases, know that many cases of tetanus recover. Most of us know, too, that there are cases of the so-called pseudotetanus of Escherich—a variety in which the symptoms are less marked and the case seems more amenable to treatment. Personally, I do not think that this good result indicates either the efficacy of the serum treatment or the necessity for this refinement of nosology. Tetanus may be intense and startling, or mild and subacute, and tetanus may recover under the ordinary sedative treatment. With an extended experience with tetanus I have come to the conclusion that my cases do just as well without the serum as with it, and this, too, although I tried diligently to convince myself of the value of this serum.

With regard to pneumonias in children, I must say that I do not consider croupous pneumonia the formidable disorder that many physicians believe it to be. If I can definitely locate a lobar pneumonia in a child I feel justified in making a favorable prognosis, and I am always glad to find that I am not dealing with a catarrhal pneumonia; hence it seems to me that serum treatment in croupous pneumonias yields clinical evidence of no great value. The large majority of these cases should recover with good hygiene and very little therapy. On the other hand, the uncertainties of catarrhal pneumonia are familiar to us all, and this disease, with its complications and sequelæ, renders serum treatment of questionable value.

DR. EDWIN ROSENTHAL, Philadelphia—I think the serums have proven themselves in the main misleading and disappointing.

THE USE OF GELATO-GLYCERIN BOUGIES IN THE TREATMENT OF ACUTE EARACHE IN YOUNG CHILDREN.*

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It is commonly stated that remedies applied to the external canal in the treatment of acute earache are of very little use, since, owing to the fact that the canal and tympanic membrane are lined with epithelium, which is an extension inward of the skin, the absorption is so slight that remedies of this class can do but very little good. While it is true that absorption is much less and slower than is the case when remedies can be applied to a mucous membrane, I am nevertheless fully persuaded that absorption of medicaments can take place through the external surface of the tympanic membrane, and that many remedies can be exhibited in this way to the comfort of the patient. In my early experience I

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often used morphin and atrophin solutions in the form of drops, and various oils and other external ear drops are in universal use.

Acute earache in young children is sudden and severe in its onset, and a remedy to be universally applicable should be one capable of quickly giving relief and easy of administration. When the inflammation has lasted for any length of time probably nothing short of a paracentesis will relieve; but there are many cases of sudden onset in which the timely exhibition of the remedy which I am about to describe will cut short the attack, relieve the child and effect a cure.

I refer to the use of gelato-glycerin bougies, in which the medicaments desired to be used have been dissolved. For their introduction I claim no originality whatever. They were first originated by the late Prof. Joseph Gruber of Vienna, and are familiar to those physicians who have been his students. He, however, does not tell how they can be made, either in his book on diseases of the ear or in his division of the Vienna formulary as given in Landesmann's "*Die Therapie an den Wiener Kliniken*," and physicians who have obtained them of the Vienna apothecary recommended in Landesmann's book have not been able to get them made in a satisfactory manner in this country. In the *Journal of Laryngology*, January, 1898, R. H. Woods of Dublin gives a formula in which liquid extract of opium, cocain and atropin are combined with gelato-glycerin, and states that in his experience many cases of acute earache in children have been aborted by their use. He does not give in his article the proportions of gelatin and glycerin, but says they should be such that while remaining solid at the ordinary temperature of the air the bougie should melt at or a little below the body temperature, thus insuring their ready dissolution when placed in the ear.

I have taken the formula of Woods' as to the main ingredients, added thereto 3 per cent. of carbolic acid, for its anesthetic and antiseptic properties, and with the aid of my apothecary have overcome the pharmaceutic difficulties in their manufacture. I first described their use in the *Boston Medical and Surgical Journal* of July 28, 1898, and later wrote in regard to them in the *Laryngoscope*, August, 1899. My experience in their use now covers four years, besides which they are extensively used for the relief of earache by many physicians of my acquaintance, and in general with very gratifying results. Further experience has convinced me more than ever of their value, especially in the early stage of acute otitis media and in acute otitis externa.

It is on account of the extreme prevalence of earache in children that I have brought the subject before this Section, in the hope that you will try these bougies. They can be made by any druggist and have the advantage that they can be used without the slightest difficulty.

The bougie when prepared is either kept in a neutral powder like lycopodium or wrapped in tinfoil. To use, the lycopodium powder is washed off in warm water, or, if wrapped in tinfoil, they are dipped in warm water. The warm water aids in their solution. The bougie is then very slippery, and the affected ear being placed uppermost it can easily be slipped down into the external canal without the slightest discomfort to any child. Here the bougie soon dissolves, the anodyne is brought directly into contact with the inflamed surfaces and the pain is relieved. Beside being a medium for the exhibition of the opium, cocain and atropia, the glycerin is of itself distinctly curative, in that it tends to draw out serum from within and lessen

the tension. A certain amount of osmosis takes place and there is, I think, absorption of the medicine contained in the glycerin. After insertion the ear should be stopped with absorbent cotton or gauze and a hot water bottle placed at the side of or over the ear. Even when paracentesis has been required and done I have found the insertion of a bougie immediately after the paracentesis to be of great relief to the patient in lessening pain and withdrawing serum and to have distinctly curative value.

Cases which have gone beyond an early stage are, of course, not relievable by this remedy, and demand treatment appropriate to the condition, whether paracentesis or otherwise; but many a case of acute earache will at once subside without going on to severe inflammation if promptly treated in this manner. Many mothers of my acquaintance keep these bougies in the house and use them at the slightest sign of earache.

The formula here given is a correct working formula and one that any pharmacist can use. My own druggist made them in a mold intended for urethral bougies and then divided each one into three. As this mold held just 14 urethral bougies the odd number of 42 is accounted for. After making they are covered with lycopodium powder or tinfoil and dispensed in a bottle, as, of course, they are somewhat hygroscopic.

R. Acidi carbolic	minims	7
Fl. ext. opii.....	minims	6
Cocaini	grains	3
Atropini sulphatis	grains	3
Aquæ	minims	52
Gelatini	grains	18
Glycerini	grains	158

To make 42 bougies.

If desired the equivalent of morphin sulphate or acetate can be substituted for the fl. ext. opium.

In regard to their manufacture, dehydrated glycerin should be used. Several apothecaries have failed to make them, being unable to get the gelatin and glycerin to stiffen properly; but the problem is not a difficult one, as the bougies have been made with success in different cities by different apothecaries.

DISCUSSION.

DR. JOHN C. COOK, Chicago—I think the glycerin and carbolic acid combination has been used for a long time, and there is no question about its value, particularly when it can be so conveniently employed as in the form described.

DR. RICHARDS—When I showed these aural bougies at the Otology Section one gentleman said that there could be absolutely no absorption in the ear, while another gentleman said that these bougies were dangerous because there would be too much absorption. Another suggested that the gelatin and glycerin could be used separately, but it should be remembered that most of these cases are seen in the night, and these substances are not usually at hand, and the drug stores are closed, hence it is desirable to have something ready at hand.

Electrocution in a Public Bath.—The dangers of electric lighting were illustrated by a most deplorable accident in a London public bath. The attendants at the institution in question were attracted by the cries of one of the bathers, and on going to the spot found him in an agony of pain and suffering from shock, which shortly afterward proved fatal. Another man was found dead in an adjoining bath. The cause of death in both instances appears to have been electric shock. Pending an official inquiry into the occurrence, the probable explanation is that the baths became connected in some way with the wires conveying the current for lighting purposes. It is difficult to imagine any other way in which a powerful electric discharge could have reached the bath. The incident should attract the attention of all responsible for baths, both public and private, in every part of the United Kingdom. If the use of electrical lamps is to involve the risk of electrocution, then the public will undoubtedly prefer the substitution of less dangerous illuminants.—*Med. Press and Circular*.