

Case 2. Miss A., school teacher. Came to office complaining of sore throat. She was sent to Health Department for throat culture which proved positive. Was taken in charge by a general practitioner. Had a very mild attack. She was given various post diphtheritic treatments closely following the treatment suggested by the Health Department of Los Angeles. After four weeks of quarantine I was asked to see patient in regard to doing a tonsillectomy. Patient was very reluctant to give consent to any operative suggestions, as the tonsils were small and patient gave no history of any previous sore throat excepting that of her diphtheria attack. She was in quarantine at the Clark Memorial Home and her quarantine was much like that of solitary confinement, not the usual home quarantine. After another week's delay, the tonsils were removed and no further positive cultures were found.

Case 3. Mr. J. C., age 24, drug clerk. Moderate attack of diphtheria, all clinical symptoms disappearing in a few days. Repeated examinations for six weeks showed positive cultures. Perfectly well otherwise. Tonsils and adenoids moderate size. Negative culture on 2-4-10 day after operation.

Case 4. A. B., age 10 years. Moderate attack of diphtheria, usual treatment. In quarantine seven weeks. Large tonsils and adenoids. Negative culture on 4-6 days after operation.

Case 5. Family in which girl age seven had diphtheria, in which three others of family became true diphtheria carriers. Patient had fairly severe attack of diphtheria, clinical symptoms lasting six days. Positive culture two weeks. The question of having tonsils and adenoids removed having been debated previous to the diphtheria attack, it was decided to remove same although in less time than is customary to advocate the operative procedure. Throat gave a negative culture on the 4th and 6th days after operation. Before quarantine was raised, culture of throats of family was taken and showed that the mother and two other children had the diphtheria bacilli in throat, but no clinical symptoms were evident. All treatments suggested were conscientiously tried, mother being a trained nurse, and after one month of unsuccessful efforts, the tonsils and adenoids were removed in the three carriers, mother and two children, with no positive cultures after operation.

Case 6. Miss J., age 16, at isolation ward of L. A. County Hospital. In hospital six weeks, clinical symptoms only for a short time. In this case Fuller's earth was tried most conscientiously for ten days without result. She also had gargles, sprays and swabs. Was out of hospital in a week's time after operation.

Case 7. Mrs. A., age 30, at isolation ward of County Hospital. Sore throat for a few days. Culture positive. Given diphtheria antitoxin. In quarantine three weeks when tonsils were removed under local anesthetic. Operation February 8, 1918. Positive culture the 12-14 and 16th. Negative after the 18th of February, patient having shown positive culture for ten days after the operation.

Case 8. Miss G., age 24, at isolation ward of County Hospital. No clinical symptoms, but found to be a diphtheria carrier. She was one of nine cases that were taken to isolation ward from County Jail where they had been exposed to a case of diphtheria. In quarantine three weeks. Iodized phenol, hot saline gargle used. Operation February 8. This patient for twelve days following operation gave no two consecutive negative cultures, but did give a negative culture several times during the first twelve days, but not until after the twelfth day did we have a throat free of the diphtheria bacillus.

Case 9. Mrs. C., age 23, at isolation ward of County Hospital. Sore throat for several days. Positive diphtheria culture. Antitoxin, iodized phenol, hot saline gargles were given. Operation

February 8, 1918. No positive cultures after operation.

In the series of twelve cases, ten gave no further positive cultures after the removal of tonsils; remembering that all of them had been in quarantine from three to six weeks and various forms of treatment tried. Case 7 did not clear up for ten days after the operation. Case 8 did not give consecutive negative culture until twelve days after the operation, although the throat gave a negative report several days, but followed by a positive the next day.

#### CONCLUSIONS.

That the frequency of the diphtheria carrier renders it important in the interest of both patient and public health to rid patient of the diphtheria infection as soon as possible.

That antiseptics and biological products are as a rule effective in clearing the throat of diphtheria bacilli, but inefficient where the infection is due to some pathological condition in nose and throat.

No adverse or unusual results were noted following the operative method and none were found reported in literature, a certain immunity in all probability explaining why we do not have a greater reaction with the virulent bacilli in throat. The removal of the foci of infection is without doubt the important factor in clearing the throat of the diphtheria bacilli, although a second factor may play an important role, and that is the *non-pathogenic* bacteria normally in the throat, taking on a rapid growth due to the post-operative conditions, thus *overriding* the diphtheria bacilli.

That the diphtheria bacilli are usually found in pure culture in crypts of tonsils that have been removed from the carrier.

That no treatment yet advocated or tried has proved successful in all cases, but that the removal of the tonsils and adenoids gives the most satisfactory results.

That the operative method has had sufficient trial to give it a recognized standing with the assurance that it has the endorsement of many of the best health authorities.

That we can and should recommend operative procedures, especially in cases that show any pathological condition and that have failed under other treatment.

#### THE USE OF HOMATROPIN IN REFRACTION.

By PERCY SUMNER, M. D., San Francisco.

A number of years ago when I was in New York there was a paper read before The Academy of Medicine on the use of homatropin in refraction. As I was at that time a student in the office of the oculist who presented the paper I was naturally greatly interested in it, as I had had an opportunity of observing some of the conclusions on which the paper was based.

It amazed me to hear in the discussions that followed that several men seemed quite opposed to the use of homatropin or any other cycloplegic in refraction and contended that they got good results by giving the manifest correction, without the use of drops. As I was at that time fresh from Vienna, where the use of a cycloplegic in

refraction was then unknown, and where the results were pronounced very poor by a number of American oculists who had observed and practised refraction under cycloplegics both in England and America; it was naturally a great surprise to hear any doubt expressed on what I had learned to consider the only way to do a proper refraction.

Since that time a considerable experience in refraction myself has given me a perspective on the subject that compels me to side definitely and finally with the champions for a cycloplegic in refraction, in the majority of cases. I have found that there is altogether too much guesswork without a cycloplegic, and although at times one may get just as good results by manifest, yet in the greater number of cases the results are absolutely indifferent and wrong. And by results I mean the increased ability of the patient to use the eyes without any discomfort or annoyance.

Are the opticians and the oculists who use no cycloplegic right when they inform their patients that the introduction of "drops" in the eye for the correction of refractive errors is not necessary and sometimes harmful? Or are the oculists who insist in every case, irrespective of age or circumstances, justified in their stand that the only way to refract the eye is to paralyze the muscle of accommodation? In other words, we have on the one hand a number of advocates for refracting the eye "just as it is"; on the other, those who protest that a paralysis of the muscle of accommodation is necessary to obtain the proper degree of error of refraction. In the latter case, then, to be consistent, the muscle must be paralyzed before attempting refraction.

Does homatropin as ordinarily employed completely paralyze the muscle? Is there any one method preferable to another to attain the desired result?

My own observation has been that when properly administered homatropin will paralyze the muscle in at least eighty per cent. of the cases, but that there is a certain per cent. that are not paralyzed and will accommodate to a certain extent after the most careful preparation, and occasionally will exhibit an annoying spasm. In a few cases, too, with small error of refraction, the homatropin seems not to affect the muscle at all. And, which is very important, even after the most complete paralysis, in from twenty to thirty minutes after the last drop has been put in the muscle will again begin to work.

It is therefore essential that the refraction shall take place immediately after the last drop is put in, so that the period of absolute quiescence can be utilized, because if not there will often come on a transient spasm that interferes with the best results. Therefore, if one believes in the use of homatropin then it must be used properly and intelligently to get the result aimed at—complete paralysis of the muscle of accommodation.

The method of using homatropin recommended by Gould, Duane, and others, of a 2% solution is most satisfactory. The solution used should not be too old. One drop in each eye every ten minutes for seven drops, making a period of one

hour. But just as important is the disposition of the patient. The whole philosophy of the procedure is to relax, primarily the muscle of accommodation; secondarily, the patient, for a keyed up patient is difficult to manage.

1. Make the patient as comfortable as possible during the instillation.
2. Have the back of the patient to the light and the eyes facing a blank wall, so that there shall be absolutely no incentive for the muscle to work.
3. After one hour's interval, refract without any delay.

Some use cocaine in addition, one half of one per cent.:

Rx	Homatropin Hydrobromide	grains 10
	Cocaine Hydrochloride	grains 2½
	Aquae	ounce 1

M. Sig.

One drop in each eye every ten minutes for eight drops.

This is a published formula of one of Gould's pupils.

Homatropin is not suitable for young children and in some young adults who have spasms of accommodation. In these cases atropin 1% solution is used for at least two days to get complete paralysis.

No cycloplegic should be put into any eye for the purpose of refraction until the condition of the disc and the tension have been determined. For years it has been my invariable practice immediately after refraction to instil at least five drops of pilocarpine nitrate 1% solution in each eye, and then have the patient put it in hourly for two days. That this is necessary is indicated by the report, about a year ago, of some oculist who recited a number of cases of increased tension and discomfort in young adults after the use of homatropin in refraction. On the general system I have not noticed any untoward effect, though I have used it on people with chronic heart diseases, pregnant women, etc. Rarely, in a neurotic person there may be a slight nausea, without vomiting, but nothing further. We can say, therefore, that in properly selected cases, there is absolutely no danger; and the discomfort from the blurring can be greatly relieved by the use of a myotic after the refraction.

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The garment industry in California has risen to importance in late years, with 75 per cent. of the workers women. With the passage of the minimum wage law, which provides for a period of learning for the workers who wish for advancement, it has been found necessary to open classes in power-machine stitching. These classes are under the supervision of the Federal Board for Vocational Education, and have been instituted in several factories. The women are taught a technical knowledge of the machine and are prepared for the next step in progress. Some of the classes are held at night and are proving satisfactory.—Vocational Summary.

## Book Reviews

**Text-Book of Biology.** By W. M. Smallwood. Third Edition. 306 pages. Illustrated. Philadelphia and New York. 1918.

This book is a good synopsis of some of the