

CONIUM, POISONING BY. See Hemlock.

CONJUNCTIVA, AFFECTIONS OF THE.—**HYPERÆMIA OF THE CONJUNCTIVA.**—Hyperæmia of the conjunctiva, when at all pronounced, is apt to be accompanied by more or less discomfort of the eyes—usually a sensation of burning or itching—and by undue lachrymation. It is met with as a transient condition and also as a chronic and persistent one.

Transient or acute conjunctival hyperæmia may arise from a great variety of causes and, as a rule, is a matter of but little moment. The presence of a foreign body upon the cornea or conjunctiva, exposure of the eyes to a strong wind, to undue heat or intense light, prolonged use of the eyes, especially with imperfect illumination, crying, irritant gases, etc., are some of the causes which may give rise to it. It also marks the onset of most superficial inflammations of the eyes, and is a frequent accompaniment of acute rhinitis and of facial neuralgia.

Chronic conjunctival hyperæmia, a condition of greater significance, is probably more frequently due to eye strain, the result of errors of refraction or anomalies of the ocular muscles, than to any other one cause. It may also be dependent upon chronic rhinitis, inflammation of the lachrymal passages, trichiasis, alcoholism, and gout.

In the treatment of this condition the most important consideration is the removal of the cause. In chronic hyperæmia the refraction and muscular balance of the eyes should be looked into, and, if they are found to be indicated, glasses should be carefully adjusted. Nasal or lachrymal disease, if present, should be treated, and measures taken to combat any disorder of the system, such as a gouty diathesis, which might be a factor in the causation of the local affection. As supplementary measures, a collyrium of boric acid (2 to 100), or of boric acid (2 to 100) and sulphate of zinc ($\frac{3}{10}$ to 100) and, especially in acute cases, the application to the lids of cold water or ice cloths, are useful.

CONJUNCTIVITIS.

Although authors given to multiplying titles describe many kinds of conjunctivitis, there seems to be no good reason for making more than eight distinct varieties, namely: (1) Catarrhal or simple conjunctivitis; (2) purulent conjunctivitis; (3) croupous or membranous conjunctivitis; (4) diphtheritic conjunctivitis; (5) follicular conjunctivitis; (6) trachomatous or granular conjunctivitis; (7) vernal conjunctivitis or spring catarrh; and (8) phlyctenular or scrofulous conjunctivitis. Whether regarded from a clinical or a pathological point of view, all of the usually described forms of conjunctival inflammation may very properly, and with practical advantage, be divided into these eight varieties, which, though they possess certain features in common, exhibit other well-marked and distinctive characteristics. As a rule it is not difficult in practice to differentiate these several varieties; but occasionally the most experienced observer may find himself at fault in this respect, being unable to determine, simply from inspection, to which class a particular case should be assigned. The history of the case, and especially its behavior under treatment, will, however, dispel the doubt. With the exception of diphtheritic and phlyctenular conjunctivitis, all of these different varieties of conjunctival inflammation are essentially local disorders. As regards their etiology much has yet to be learned, though considerable progress has been made in this direction within the past few years. Catarrhal conjunctivitis undoubtedly arises from a variety of causes. It may, like catarrh of the nasal or bronchial mucous membrane, be produced by exposure of the surface of the body to cold, and is then doubtless dependent directly upon vaso-motor disturbance; or it may be excited by irritant vapors or other substances coming in contact with, and acting immediately upon, the conjunctiva. There is also a variety which is decidedly contagious, and which under favorable conditions spreads from individual to individ-

ual, direct contact or transference of secretion from one eye to another not being necessary to its propagation. Here, doubtless, there is a volatile specific germ which finds in the conjunctival sac conditions especially favorable to its development, and which during its sojourn there excites in this membrane, in much the same fashion that the irritant vapor does, first a hyperæmic, and then an inflammatory condition. According to Weeks, the micro-organism which gives rise to this variety of conjunctivitis is a small bacillus, resembling that of mouse septicæmia, which stains readily with methylene blue and loses its color by the Gram method. Other investigators, however, have been led to regard the pneumococcus as the active agent. Purulent conjunctivitis, on the other hand, which rarely occurs, in this country at least, except in the new-born from infecting vaginal discharges, and in adults from gonorrhœal inoculation, is (in these forms at any rate) essentially a specific germ disease; and, fortunately for the human race, the micro-organism—the gonococcus—which gives rise to it, is non-volatile, and, therefore, communicable only by gross transplantation and not through the medium of the atmosphere.

A priori, there is no reason why a purulent conjunctivitis should not be produced otherwise than through the agency of the gonococcus, and probably under certain conditions of climate, etc. (as in Egypt), this may happen; but, under the relatively favorable hygienic conditions which prevail in this country, it may be safely asserted that a conjunctival inflammation of such intensity as to warrant its being classed as purulent, scarcely ever occurs except as the result of gonorrhœal inoculation.*

Trachomatous or granular conjunctivitis is also doubtless the product of a specific germ. It is decidedly contagious, but, like purulent conjunctivitis, is communicated only by direct transference of discharge from eye to eye. A small diplococcus, isolated by Sattler, is supposed to be the contagium which gives rise to it, but this has not been definitely proven.

Diphtheritic conjunctivitis is, of course, due to the presence in the conjunctival sac of the Klebs-Löffler bacillus; but, as the ocular mucous membrane does not seem to be a favorite habitat for this organism, it is a disease of rare occurrence.

As to the etiology of croupous conjunctivitis and of vernal catarrh, we are yet without definite knowledge; that of phlyctenular conjunctivitis will be considered later.

Having said this much regarding the specific characteristics of the several varieties of conjunctival inflammation, we shall take up separately each variety for more particular consideration, and, having in mind the practical purpose of this article, shall deal with them from a therapeutical rather than from a pathological standpoint.

CATARRHAL CONJUNCTIVITIS.—In a well-marked attack of this disease, decided evidences of ciliary irritation are present. Pain is rarely felt, but, especially at the commencement of the attack, there are photophobia and more or less profuse lachrymation. A sensation as though a foreign body were in the eye is almost always complained of; and, as at this stage of the disease the symptoms, including the commencing conjunctival injection and the slight mucous discharge, are precisely such as are produced by the presence of a foreign body, it is always best, by careful inspection, to make certain that they are not due to this cause. The cornea, therefore, should be carefully scanned, and the lids everted and their conjunctival surface scrutinized, so that the presence of a foreign body may not be overlooked. Although catarrhal conjunctivitis almost invariably affects both eyes (differing in this respect from phlyctenular, and to a still more pronounced degree from purulent conjunctivitis), it sometimes begins twenty-four or thirty-six hours sooner in one than in the other. When, already, both are

*The writer does not recall a single case of well-marked purulent conjunctivitis met with, in either hospital or private practice, during an experience of nearly thirty years, which could not be traced either to some similar case or to inoculation with a vaginal or urethral discharge.

affected there is, of course, small reason to suspect the presence of a foreign body. In mild cases the inflammation is limited to the palpebral conjunctiva and the discharge is slight and mucoid in character, gumming the lids together during sleep, but during the day showing itself only about the inner canthus and in the retrolarsal folds of the conjunctiva; in severe cases there is marked injection of the bulbar conjunctiva, and the discharge is more profuse and is muco-purulent in character. The injected vessels are comparatively coarse, are tortuous and movable, and cause the bulbar conjunctiva to have a uniform brick-red color, in marked contrast to the pinkish, pericorneal injection, due to hyperæmia of the finer and immovable subconjunctival vessels, which is characteristic of corneal and iritic inflammation.

Epidemics of catarrhal conjunctivitis not infrequently occur in orphan asylums and in other institutions where large numbers of children are brought together. Under such circumstances it is apt to be more severe in type (closely resembling, in some instances, trachomatous conjunctivitis) and less amenable to treatment. Especially in strumous children, a conjunctivitis purely catarrhal at the outset, and due, perhaps, to cold or contagion, may assume a phlyctenular type, and, secondarily, the cornea may become involved. The use of unduly strong astringent collyria tends to bring about this unfavorable change.

Catarrhal conjunctivitis rarely assumes a chronic form, except through the operation of special causes. In obstinate cases, therefore, complicating conditions must be sought for, and, if possible, eliminated. Sometimes it will be found that the conjunctival inflammation is only a secondary manifestation of a chronic naso-pharyngeal catarrh, or there may be stricture of the nasal duct present, with blennorrhœa of the lachrymal sac. In other instances the strain due to optical errors may prolong the attack, or even excite a mild form of conjunctivitis. Extraneous causes, such as the presence of irritant gases in the atmosphere (as in the neighborhood of certain manufacturing establishments), also have their effect, rendering of no avail remedial measures which otherwise would prove effectual.

The treatment of this variety of conjunctivitis can be described in a few words. The most important point to bear in mind is, that harsh remedies are to be avoided, as they are likely to do harm by producing corneal complications, and so converting a very simple into a possibly serious condition. When there is considerable ciliary irritation at the commencement of the attack, decided relief may be obtained by applying to the closed lids, more or less constantly, linen or absorbent gauze pads wet with a lotion of boric acid and opium (ext. opii, 0.60 gm.; boric acid, 3 gm.; aq. destill., 128 gm.; or ext. opii, gr. x.; boric acid, gr. xl.; aq. destill., ℥ iv.)—a most useful preparation in many conditions of the eyes attended by ciliary irritation. As a collyrium the writer has found nothing so generally efficacious as a 2 to 100 solution of sulphate of zinc, the proportion of the latter being varied, according to the amount and character of the discharge and the sensibility of the eye, from $\frac{1}{10}$ to 100 to $\frac{1}{2}$ to 100 (zinci sulphat., gr. ʒ i.; acid. boric., gr. x.; aq. destill., ℥ i.). By means of an eye-dropper this should be applied to the eyes freely three times a day, the head being held back, and the solution kept in contact with the eye for some moments. In addition, a simple ointment such as cold cream or vaselin cerate,* should be applied to the edges of the eyelids at bedtime, to prevent their being gummed together by the drying of the discharge during the night.

Under this treatment the inflammation usually begins to subside within a day or two, and at the end of a week or ten days will have entirely disappeared. When a satisfactory improvement does not manifest itself, some other astringent should be substituted for the sulphate of zinc. Alum and nitrate of silver are both useful, the for-

*Yellow wax, one part; vaseline, four parts: melted together and stirred while cooling.—Vide Trans. Am. Ophthalmological Soc., vol. iii., p. 572.

mer in the proportion of gr. ij. to ℥ i., the latter in much weaker solution—gr. ʒ i. to ℥ i. Tannin (gr. iv. to viij. to ℥ i.) is a favorite remedy with some, while protargol, in from 5 to 100 to 10 to 100 solution, has recently been highly commended. When there is doubt as to the character of the inflammation—whether it be simply catarrhal or phlyctenular—boric acid in a fairly strong solution is the safest thing to prescribe, as it is likely to do good in either case and certainly can do no harm. In obstinate cases the probable existence of complicating conditions is to be borne in mind, and if found to be present, these, of course, should receive the attention they may require. Should the inflammation assume a phlyctenular character the use of astringents ought to be discontinued at once, and in their stead the remedies employed which are suited to this form of conjunctivitis.

After a severe attack of catarrhal conjunctivitis, especially if its treatment has been neglected, the eyes sometimes remain asthenopic and irritable for a considerable time. When this occurs they should be given as perfect rest as practicable, the state of the patient's health, which commonly needs building up, should be looked after, and soothing local remedies, such as the boric acid and opium lotion referred to above, or a collyrium of boric acid (2 to 100) should be employed.

PURULENT CONJUNCTIVITIS.—Although it is possible, as has been said, for a conjunctival inflammation of such intensity as to deserve the name purulent to be excited in a variety of ways, practically, a pronounced purulent conjunctivitis hardly ever occurs, at least in this country, except as the result of gonorrhœal inoculation.

In the severer types of catarrhal conjunctivitis the discharge, as has been stated, frequently assumes a muco-purulent character, and also in some cases of scrofulous conjunctivitis this may happen; but these are not cases of true purulent conjunctivitis, and should not be described, as they sometimes are, as such. In purulent conjunctivitis the inflammation, though similar in character, is far more intense than in the catarrhal form. The discharge, which is very profuse, is thick and creamy, and, since the inflammation is not confined to the conjunctiva but involves the submucous tissue, the lids become greatly swollen and tense, so that it is commonly impossible to evert them, and the loose texture covering the anterior segment of the ball so cedematous and chemotic that it overlaps and nearly hides from view the cornea. In consequence of this the nourishment of the cornea is seriously interfered with, and ulceration and necrosis frequently occur, and may lead to its complete destruction. The prognosis is more grave, and the inflammation usually runs a more violent course, in the gonorrhœal conjunctivitis of adults than in the infantile form of the disease. Why this should be is not plain, since both are due to specific inoculation, and in the discharge from each the gonococcus of Neisser is present. Probably, as has been suggested, the explanation is to be found in the fact that the discharge which infects the eyes of infants is seldom the product of a recently acquired gonorrhœa, whereas in adults the inoculation is more apt to occur during the height of the urethritis or vaginitis, when the infecting power of the discharge is greatest. It would seem, however, apart from this, that the eyes of the new-born are capable of resisting the disease better than are those of adults. From twelve to forty-eight hours is given as the interval which usually elapses between the inoculation of the eye and the outbreak of the disease (Nettleship); but in infants the interval is not so brief, since the inflammation of the eyes does not manifest itself, as a rule, until the third or fourth day after birth. In ophthalmia neonatorum both eyes are usually affected, because each is almost sure to be inoculated with the vaginal secretion; in adults the disease begins in one eye, and only spreads to the other if there is an actual transference of the discharge. In the beginning of the attack there are considerable photophobia and lachrymation, with a sensation as though sand were in the eye. Later on, the irritation of the ciliary nerves is so great as to cause severe pain, which

may become intense if perforation of the cornea occurs with prolapse of the iris and secondary iritic inflammation. At first the discharge is not purulent, but mucoid or thin and watery in character. This usually gives place very soon to a true purulent discharge, which is thick, yellowish, and very abundant. In some cases this change is slow in manifesting itself, and under such circumstances the inflammation is apt to be more intense, and the appearance of the purulent secretion may be preceded by a plastic infiltration of the subconjunctival tissue, and a membranous exudation upon the surface of the conjunctiva. After this severe type of the disease cicatricial bands, like those which occur in the submucous tissue of the urethra and give rise to stricture, may form in the conjunctiva and in the cellular tissue beneath it, and by their contraction may cause distortion or incurvation of the lids. Opacities of the cornea, varying in extent and density, due to ulceration, with in many instances anterior adhesions of the iris, are among the frequent consequences of purulent conjunctivitis.

Besides the true purulent form of ophthalmia neonatorum, which outside of lying-in asylums is comparatively a rare disease, there is a mild variety of conjunctivitis, very amenable to treatment, which is frequently met with in the new-born. It is characterized by slight swelling of the lids, considerable conjunctival injection, and a mucoid discharge sufficient in amount to gum together the lashes. It yields very promptly to the instillation, three or four times a day, of a 2 to 100 solution of boric acid, and as we can never be certain when we encounter this mild form of conjunctivitis that it is not the incipient stage of the more severe ophthalmia, its treatment should in no case be neglected.

Exceptionally, this mild type of conjunctivitis in the new-born does not respond so satisfactorily to treatment, and then it will usually be found that it is associated with and dependent upon a blennorrhœa of the lachrymal sac. A collyrium of bichloride of mercury (1 to 12,000), to be dropped into the inner corner of the eye, after the lachrymal sac has been emptied of its contents by gentle pressure with the tip of the finger, is the remedy the writer has found most useful in controlling this condition, which, in his experience, rarely requires operative treatment. Alum and boric acid, and nitrate of silver (1 to 2,000) are also useful.

In gonorrhœal ophthalmia the prognosis is extremely grave, destruction of the cornea being of frequent occurrence. When this destruction is not complete, however, the ultimate result as regards vision is far better than would seem possible during the height of the inflammation, the portions of the cornea not destroyed clearing up in a surprising manner. The disease runs a tedious course, and, even when the cornea escapes, the conjunctival inflammation may not disappear entirely for two or three months. After the more acute symptoms have subsided, a "granular" condition of the palpebral conjunctiva, which closely resembles true trachoma, but should not be confounded with it, as it is less obstinate and more amenable to treatment, frequently makes its appearance.

In the treatment of purulent conjunctivitis time is a most important element. If seen at its very commencement, it is possible, by active measures, to cut short even a case of genuine gonorrhœal ophthalmia. The writer's experience furnishes at least one unquestionable example of this. The success which has attended the prophylactic measures recommended by Credé, for the prevention of ophthalmia neonatorum, shows what may be accomplished in this disease by treating the eye immediately after the inoculation has occurred, and before inflammation has had time to develop. Credé's plan is to drop into the eyes of all children, directly after birth, when there is reason to fear inoculation, a 2 to 100 solution of nitrate of silver. In the large lying-in hospitals of Europe, where this plan has been extensively adopted, every child being treated in this way, the results have been extremely satisfactory, the percentage of ophthalmia neonatorum, heretofore so large as to be a matter of

serious moment, having been reduced to a small fraction of what it formerly was; and, as the instillation of such a solution into the eyes of the new-born seems to be attended by no unpleasant consequences, this prophylactic measure should never be neglected when there is the slightest reason to fear that inoculation has occurred.

The abortive treatment of gonorrhœal conjunctivitis, which has been practised for many years, is practically the same as that suggested by Credé for ophthalmia neonatorum. It consists in the daily application to the everted lids, at the earliest possible moment after the disease has begun to manifest itself, of a strong solution of nitrate of silver (from 2 to 100 to 4 to 100). When there is reason to suspect that there has been a transference of specific matter to the eye, the risk involved is so great as to justify resort to this treatment without waiting for the supervention of conjunctivitis, especially as the pain which the application of the silver solution produces may be obviated entirely by instilling into the eye, beforehand, a few drops of a 4 to 100 solution of muriate of cocaine, or better still, perhaps, of a 1 to 100 solution of muriate of holocaine. When, however, the disease has once become fairly established, we can no longer expect to cut it short. Our efforts, then, must be directed to controlling, as far as possible, the intensity of the conjunctival inflammation, and preserving the integrity of the cornea.

Although various remedies have from time to time been recommended as especially efficacious in the treatment of purulent conjunctivitis, there is not one which has proven so generally useful as nitrate of silver. The daily application (to the everted lids, if the swelling is not too great to prevent their being turned out) of a strong solution of nitrate of silver (from 2 to 100 to 4 to 100, according to the condition of the cornea and the sensitiveness of the eye), anaesthesia having been induced beforehand by a 1 to 100 solution of holocaine; the instillation two or three times a day of a $\frac{1}{2}$ to 100 to $\frac{2}{3}$ to 100 solution (gr. i.-iij. to $\frac{2}{3}$ i.) of nitrate of silver; the application, in a similar manner, of a 1 to 100 solution of sulphate of atropine, to diminish pain and to obviate, or favorably influence, corneal complications, together with the more or less constant application of ice-cloths to the lids, if grateful to the patient, or, if more acceptable to him, of cloths wet with a lotion of opium or belladonna (ext. opii vel ext. belladonnæ, 2 gm. (gr. xxx.); aquæ, 256 gm. (fl. $\frac{2}{3}$ viij.)), and the careful cleansing of the eye every hour, or even every half-hour, while the discharge is profuse and creamy, with a saturated (4 to 100) solution of boric acid, constitute a plan of treatment which, in the gonorrhœal ophthalmia of adults (the most virulent form of purulent conjunctivitis), offers the best prospect of success, and which, with slight modification, generally is successful in the infantile form of the disease. When ulceration of the cornea is present, the stronger solutions of nitrate of silver are not so well borne, and must be used with more caution, being applied, if practicable, only to the palpebral conjunctiva, and not allowed to come in contact with the cornea; or the silver solution may be neutralized by applying directly after it a warm solution of table salt. When there is pronounced chemosis, scarification of the conjunctiva does good by depleting somewhat the distended vessels; and when the swollen lids appear to be exerting dangerous pressure upon the eye, free division of the outer canthus (a single cut with strong, straight scissors, in a horizontal direction, will suffice) is recommended, and is doubtless a judicious procedure, although the writer's experience has not presented a case in which resort to it seemed to be called for.

Protargol, in from 20 to 100 to 40 to 100 solution, has of late been recommended as a useful substitute for nitrate of silver, its chief advantage being that its application causes but little discomfort. Several cases of ophthalmia neonatorum, recently under the writer's care, have yielded in an exceptionally favorable manner to protargol, supplemented by hourly cleansing of the eyes with a saturated solution of boric acid. A 10 to 100 to 20 to 100 solution of protargol was dropped into the eyes three

times a day, and a 40 to 100 solution (which seemingly caused but little discomfort) was applied to the everted lids every other day.

As the transference of pus from the inflamed eye to the sound one will almost inevitably cause the disease to develop in it, every precaution should be taken to prevent this happening. The patient and attendants should be constantly warned of the danger of handling the sound eye when there is a possibility of the discharge being on their fingers, and of the risk of inoculating this eye while cleansing and applying remedies to the diseased one. To lessen this latter risk, as well as to diminish the danger of the attendant's eyes being inoculated, the writer would suggest that the discharge be removed by means of absorbent cotton, and not, as is usually recommended, with a syringe. While the discharge is abundant the patient should not be allowed to lie with the diseased eye uppermost, as in this position the pus may flow across the bridge of the nose, and so reach the opposite eye. The frequent washing away of the discharge with the boric-acid solution, as already suggested, will further lessen the likelihood of this accident occurring. Most authorities recommend that the sound eye be hermetically sealed up with rubber adhesive plaster and colloidion; and, to render this more endurable to the patient, Dr. Buller, of Montreal, inserts a watch glass between two layers of the rubber plaster, so that the eye may still be used, and leaves the outer and lower angle of the covering open for ventilation.

As the intensity of the inflammation subsides, and especially as the discharge diminishes and loses its creamy consistence, becoming muco-purulent in character, the treatment should be less active, the astringent and antiseptic applications being made at longer intervals, and the strong silver solution diminished in strength or tentatively omitted. It is in this way only—by carefully watching the effect of the remedies employed, and by modifying the treatment from time to time as may seem necessary—that the inflammation can be kept in some measure under control, and the great danger which constantly impends, destruction of the cornea, be obviated. Besides the remedies which have been mentioned, others, such as corrosive sublimate in weak solution ($\frac{1}{2}$ to 100), carbolic acid (5 to 100), finely powdered iodoform, to be applied freely to the conjunctiva, peroxide of hydrogen, and weak solutions of permanganate of potassium, trikresol, and formaldehyde, have been recommended as useful in this disease.

In the so-called diphtheritic form of purulent conjunctivitis, in which the discharge is thin and ichorous, and there is a tendency to plastic exudation and infiltration, strong astringent solutions are contraindicated. Boric acid and atropine should here be chiefly relied upon, until by the application of warm fomentations the type of inflammation shall have been changed, and the discharge shall have assumed a purulent character, when the use of protargol or nitrate of silver should be begun with caution and the effect carefully noted.

Constitutional treatment may not be called for in all cases, but when the patient is in robust health and of plethoric habit, the good old plan of moving the bowels freely by a mercurial purgative will do good; while, on the other hand, quinine should be given freely, supplemented by iron and a generous diet, when there is anæmia and an impoverished state of the system. After the acute symptoms have subsided, alum and tannin are especially useful in overcoming the persistent hyperemia of the ocular, and the so-called "granular" condition of the palpebral conjunctiva.

The treatment of purulent conjunctivitis in the infant is essentially the same as in the adult, except that, as the inflammation is generally less intense, the caustic and astringent solutions should be somewhat milder, ice-cloths are not indicated, and the opium and belladonna fomentations are, of course, out of place. The instillation of atropine, however, should not be omitted, especially if ulceration of the cornea be present or threatening. Chiefly from maltreatment or neglect, this affection

probably causes a greater amount of irremediable blindness than any other one disease of the eyes. When the destruction of the cornea has not been complete, however, it frequently happens that great improvement in vision may be obtained by a well-placed artificial pupil.

CROUPOUS OR MEMBRANOUS CONJUNCTIVITIS.—It is with some hesitation that I describe this variety of conjunctival inflammation as a separate disease, since there are excellent reasons for regarding it rather as simply a type of inflammation prone to occur, under favoring conditions, in several different kinds of conjunctivitis. Reference has already been made to the fact that certain cases of purulent conjunctivitis, of unfavorable type and accompanied by a thin, watery discharge, are characterized by the formation of a "croupous" membrane, usually upon the palpebral, but occasionally upon the bulbar conjunctiva; and it may be added that a similar disposition occasionally manifests itself in catarrhal conjunctivitis. A typical form of membranous conjunctivitis is that which is induced by the application of the jequirity bean in the treatment of trachoma. In rare instances a chronic form of croupous conjunctivitis is met with, and the membrane forms and re-forms repeatedly for weeks or even months.

In true diphtheria of the conjunctiva the membrane forms upon the bulbar as well as upon the palpebral conjunctiva; but in the milder affection which we are considering the exudate, which does not invade the subconjunctival tissue, as in true diphtheria, and can, as a rule, be easily detached, is commonly confined to the conjunctiva of the lids. The danger of corneal implication is comparatively slight; but there is apt to be marked ciliary irritation and more decided œdema of the lids than is found in catarrhal conjunctivitis. The discharge is scant and watery. After a few days the membrane—which consists of a meshwork of clotted fibrin, pus corpuscles, and epithelial cells—ceases to be formed, and the case assumes the features of a severe catarrhal, or, perhaps, of a purulent, conjunctivitis.

The general condition of the system seems to have much to do in determining this type of conjunctival inflammation. Unhealthy, ill-nourished children—the subjects of inherited syphilis, for example—are especially prone to it. It may also be induced by the injudicious employment of too severe remedies in catarrhal and purulent conjunctivitis, as, for example, unduly strong solutions of nitrate of silver.

The treatment should be constitutional as well as local. Iron and quinine are indicated, and mild applications to the eyes. Boric acid, in ten- to fifteen-grain solution, is useful, as is also a 1 to 8,000 solution of corrosive sublimate. Atropine (gr. i.- $\frac{2}{3}$ i.) may be employed with advantage when there is marked ciliary irritation. After the formation of the membrane has ceased, and the discharge, previously watery, has become purulent or muco-purulent, astringents—sulphate of zinc, alum or protargol, in mild solution—are called for, but should be used with circumspection.

DIPHTHERITIC CONJUNCTIVITIS.—True diphtheria of the conjunctiva, characterized by the presence of the Klebs-Löffler bacillus—to which condition the term diphtheritic conjunctivitis should be restricted—is, as has been said, a disease of extreme rarity. It occurs more frequently in children than in adults, and is one of the most dangerous affections to which the eye is subject. Destruction of the cornea, in consequence of the rapid and extensive infiltration of the ocular conjunctiva interfering with its nourishment, is the result which is most to be dreaded. Speaking of its mode of origin, Nettleship says: "Very rarely the process creeps up to the conjunctiva from the nose in cases of primary diphtheria, or is caused by inoculation of the conjunctiva with membrane; while in a few the ophthalmia forms the first symptom of a general diphtheria." Diphtheritic infection of the eye has also been known to occur after operative procedures. The onset of the disease is sudden, and its development rapid. The lids are not only greatly swollen, but, owing to the solid infiltration into their texture, are tense and brawny.