



## OPHTHALMOLOGICAL MISCELLANIES.\*

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In reviewing the literature of ophthalmology we have been induced to note a few of the novelties of this special branch of the practice of medicine, because we feel confident that many interesting and unique cases must be lost to those who do not have time enough to read all that is published in the several special journals throughout the world. Unless one is working day by day in this special field, he can form no idea of the vast amount of literary work annually published by ophthalmologists at large. The eye is divided and subdivided, and studied macroscopically as well as microscopically, some workers even devoting large portions of a lifetime to the embryology of but a part of the optical apparatus.

We are indebted for most of this material contained to the *Archives of Ophthalmology*, edited in English and German, and issued quarterly by Drs. H. Knapp, of New York, and C. Schweigger, Berlin, in conjunction with more than half a hundred of distinguished men throughout all parts of the world, each contributing to make up a volume of over 500 pages of rich and rare literature. When we consider that this constitutes but a portion, much less than half, of all that is written, it is easy to imagine how impossible it would be for any one man in active practice, to read all that might, even on account of its novelty, be of interest to him.

To look back over a period covering about three years, and without reference to a special date, we would notice the use of a "magnet" for the removal of particles of steel and iron from the interior of the eye, devised by Gruening, of New York; the same instrument has been used for the removal of pieces of steel from the anterior chamber, and cornea; another for the detection of the presence and location of pieces of steel and iron in the eye by the indication of a magnetic needle, by Pooley, of New York.

Hirschberg reports the successful removal of a piece of iron from the eye, and Jany a chip of iron from the vitreous, with the electro magnet; he says, "real triumphs are gained with the magnet only in those cases where we have to deal with a piece of iron which has but recently entered and is suspended in the vitreous, and which, with forceps, hooks, and spoons, can but rarely be removed without permanent damage to the eyeball."

Magnus recalls the fact that the magnet had been used as early as 1646 by Fabricius Hildanus, and, as he expressly mentions, at the suggestion of his wife.

Jeffries, of Boston, removed a piece of iron from the eye by the electro-magnet through a corneal section, and Oppenheimer removed another through a scleral section; Gruening's magnet was used in this case.

Herman Schafer, in speaking of the effects of eserine and the mydriatics atropine, duboisine, homatropine and hyoscyamine, states in regard to the influence of eserine upon the three agents, atropine, duboisine, homatropine, that it counteracts the effects of homatropine completely and permanently; that of duboisine, and more particularly that of atropine, however, only when instilled in larger quantities, and then only for a brief period, after which it yields again to the effects of the latter.

In general, it is sufficiently demonstrated that, as respects the dilatation of the pupil, atropine, if somewhat slower, possesses a more lasting influence than duboisine; that the latter dilates the pupil in a shorter time, and momentarily acts more energetically, but loses its influence more quickly; finally, that homatropine develops its influence in a briefer time than either of the other agents, but produces a lesser dilatation of the pupillary diameter, and is the first to decline in its effects. The degree of concentration in which the homatropine is employed is apparently without influence upon the duration of the effect.

The accommodation is paralyzed more rapidly by

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*duboisine* and *homatropine*—by *DUBOISINE* even a little more so than by *homatropine*; with the latter, however, the normal state returns in twenty-four hours, with *duboisine* after three to four days. *Paralysis of the accommodation by atropine* proceeds very gradually, and persists the longest.

In accordance therewith would be the practical application of these three agents. Were it desired to secure simply dilatation of the pupil for the purpose of examining the fundus, or to paralyze the accommodation for the certain determination of the state of refraction, *homatropine* is decidedly to be preferred to the other drugs.

Risley concludes, "That for the correction of anomalies of refraction in otherwise normal eyes, the *homatropine* is to be preferred."

If, on the other hand, a therapeutical effect is desired, *homatropine* is to be set aside, on account of its insufficient and too restricted effect, and the application of *atropine* and *duboisine* can alone enter into consideration.

Risley, from a therapeutic standpoint, concludes "That if retino-choroidal disturbance is also present, *hyoscyamine* or *duboisine* are preferable, (a) to *atropine*, because of the shorter duration of the treatment; (b) to *homatropine*, because of their more persistent control over the ciliary muscle; and that *hyoscyamine* is preferable to *duboisine*, since the tendency to systemic poisoning is not so great.

Shäfer recommends the use of *duboisine* in iritic conditions, with or without extensive synechiæ, where *atropine* had been employed for some length of time, and with but partial success, on account of conjunctival and ciliary injection. *Duboisine*, he says, never causes conjunctival irritation, and even diminishes that caused by *atropine*. And we cordially endorse the recommendation of *duboisine* in iritic conditions. Knapp says of *quinine amaurosis* that the characteristic features, according to Roosa, Wecker, Voorhies, Michel, Gruening, and himself, are:

1. Total blindness subsequent to the taking of large quantities of *quinine*.

That the total blindness, in all the cases thus far made known, was only temporary.

2. Pallor of the optic discs.
3. Marked diminution of the retinal blood-vessels, in number and calibre.
4. Contraction of the visual field.

K. mentions some other symptoms: "1. Diminution of the color-sense (red-green, then green blindness); 2, diminution of the light sense (as if a veil was over the eyes); 3, the pupils during the total blindness are irresponsive to light, but

(Gruening) move on accommodative efforts; 4, anesthesia of the cornea; 5, impairment of hearing, to total deafness and *tinnitus aurium* in every case, though transient."

The subjective noises and deafness, though exceedingly frequent symptoms of *quinism*, are always transient, at least he has not been able to trace one case of persistent deafness or *tinnitus aurium* to the use of *quinine* alone. (L. Turnbull has long since emphatically expressed himself in a similar way.) The impairment of sight, he says, will disappear entirely in the mild cases, whereas in the severe typical ones the restoration of the central acuteness of vision seems to be complete only in a certain number of cases; in almost all, however, a fair amount,  $\frac{2}{3}$  to  $\frac{3}{4}$  of S., is regained. The contracted visual field expands slowly, commonly does not reach its natural limits again.

The progress of *quinine amaurosis*, even in advanced cases, is, on the whole, good, as there is thus far no case of permanent blindness on record, and the typical, i. e., fully developed cases, are very rare. How frequent the mild cases are, and how rapidly they recover, remains for further investigation to ascertain. No beneficial mode of treatment seems yet to have been discovered. The "depleting therapy" to which V. Graefe ascribes the recovery in his second case will, in view of the marked ischæmia of the retina discovered of late, scarcely find any advocates now. Nitrite of amyl, given in the way of inhalation, by Voorhies, Gruening, and Michel, showed no effect. Strychnia and other remedies, as well as electricity, were likewise inefficient. Horizontal position, as long as the general anæmia, and particularly that of the brain and eye, are marked, seemed beneficial. Generous diet, with perhaps gentle stimulants, and as soon as practicable sojourn and exercise in a healthy, invigorating atmosphere, appear rational means of recovering strength, and supplying the retina with what it most needs—blood.

Chisholm uses the actual cautery needle in the treatment of conical cornea. The operation is performed with a fine sewing needle, heated to whiteness in an alcohol lamp, and thrust through the apex of the cone. The subsequent cicatrization causes the flattening of the cone. Dr. C. also uses a needle designed for the destruction of the hair-bulbs, in cases of displaced cilia, by electrolysis. It consists of a needle set into a handle, which is introduced cold into the root of the hair-bulb. By pressing on a button connection is made, and the needle becomes heated, and the electrolytic action is manifest by the bubbles of gas escaping.

Wall reports a case of *congenital absence of the eyeballs*, "anophthalmia." The *tutamina oculi* were perfectly formed, but there were no eyeballs, even in a rudimentary form. The lachrymal gland was present. The child was a white male, and six months old.

Ayers mentions concerning the *physiology of the visual purple*, and sums up his conclusions as follows: "We know that the purple is a photochemical substance which is sensible to light, and that its seat is in the outer segments of the rods, whereas it is never found in the cones. The cones, on the other hand, being the only elements found in the fovea centralis, we are forced to the conclusion that distinct vision, both for objects and for colors, is independent of its existence. In the higher classes of animals it is sensitive to light, but in some deep-sea fishes, cephalopods, etc., it has its seat in the rods, but is no longer sensitive to light, although it has the same color as before. Where it is not sensitive to light, the optical structure of the eye is very defective. It is an albuminoid compound, and is a secretion of the pigment epithelial cells of the retina; but this secretion is not controlled by any of the larger nerve-trunks, which have a part to play in the functions of the eye. We know of no drug which can diminish its secretion, but pilocarpine and muscarine greatly increase it."

Galezowsky reports a case of *congenital irideremia*, (absence of the iris) through several generations.

Wolfe (Glasgow) reports a case of *bleeding tumor of the iris*, about four mm. in diameter, bleeding every four to six weeks.

Chisholm reports a *piece of metal in the eye for twenty-three years* without causing sympathetic ophthalmia.

Bremer, among 223 deaf mutes, found nine cases = 4 per cent. of *retinitis pigmentosa*.

Haffner reports the *rare migration of a round worm 3 cm. in length, into the left lower lachrymal canal*, in a child suffering from severe whooping-cough.

Sigismund reports a *small splinter of wood kept in the eye for forty-seven years* without any disturbance.

As ophthalmological anomalies, Keyser reports three cases of *congenital dislocation of crystalline lenses* (ectopia lentis); in one, aged twenty-six, the lenses were dislocated differently, but not symmetrically, as is usually the case. In the right eye, the lens was dislocated inward, and the left eye directly upward. In the other two cases, which were also anomalies, the lenses were dislocated directly downward, entirely out of the re-

gion of the pupil. These two cases were daughter and mother.

A case of *double pupil, diplokoris*, in but one eye of a lady aged twenty-six. There was a broad band  $1\frac{1}{2}$  mm. in width, running across, from margin to margin of the iris, at an angle of  $110^{\circ}$ . It extended only from the extreme pupillary edges of the iris, and was of the same thickness and color, and continuous structure of the iris. Patient had never suffered from any inflammation of the eye. As a congenital anomaly of the iris, it was rare, as occurring in but one eye.

W. Sykes contributes clinical notes and remarks on a *disease of the eyes peculiar to colliers*.

The sight first fails in bad light, and grows gradually worse, till the pupils are dilated and insensible to light, and only a perception of light remains, while nystagmus is well marked. Recovery takes place on exposure to light and air, without other treatment. The miners attribute the disease to the bad light given by the safety lamp, but Sykes believes it to be toxic, from gases accumulating in the pits.

Sorokin writes of *parasitic growths in the eye*.

The forms observed by Förster and Gräfe do not belong to leptothrix. In the cornea of an eye which had perished from panophthalmitis, he observed long, thin, opaque filaments; they are thicker than those of leptothrix-buccalis, show a tendency to twist themselves lengthwise around each other, or to assume a curved form. Attempts at cultivation failed, excepting in human blood; here the filaments lengthened, gathered themselves together in a curved form, showed transverse marks of segmentation, and divided into two to five pieces of different length; the process lasted from twenty-five minutes to one hour. The new pieces congregated, and thus formed additional bundles. This is a new form, leptothrix oculorum Sorokini. In an eye effected with panophthalmitis after iridectomy, and also in an existing catarrh of the lachrymal passages, he found filaments dividing dichotomically, having a thickness of two or three division-marks of the micrometer; they also exhibited transverse division, and thus formed widened rings. The twigs branch off only where there are transverse divisions. Besides these, there were folds of cells of various size and shape. All attempts at cultivation failed.

Leydig, of Bonn, speaks of *The Eye-like Organs of Fishes*.

Certain spots upon the ventral surface of some sea-fishes, which by Leuckart had been explained as secondary eyes, are not taken as organs of spe-

cial sense by Leydig, who supposes that they are allied to the pseudo electrical or electrical organs of other fishes.

Wetschamton reports *An Anomalous Structure of the Human Eye*.

Absence of both irides. Both eyes turned in and up.

Wiethé. A case of *Congenital Deformity of the Papilla*.

The papilla showed two dark elliptical depressions, likely colobomata.

Lagethschnikoff reports a rare case of *Elephantiasis Palpebrarum*.

Both lids are very much enlarged; the upper hangs down to the nasal angle. The disease began in early childhood. *Filaria sanguinis immitans*.

Gouvêa Hilario (de Rio Janeiro) reports a case of *Aniridia Congenita of Both Eyes, with Deficiency of Ciliary Bodies and Anterior Part of the Choroid*.

Man, 23 years old; complete absence of iris in both eyes; lenses dislocated upward, so that there was an aphakic space at the lower corneal margin. There was no sign of the presence of ciliary processes, nor of the anterior part of the choroid, while the posterior part was more or less normal, as were also the blood-vessels of the retina.

A knotty and most weighty question which is of the greatest interest to all medical men and parents is answered, and in our opinion well sustained by experience, in the conclusions of Berlin and Rembold, of Stuttgart, who say: "The present slanting system of penmanship should be retained, and the school-boards and teachers should understand the necessity and importance of these directions, so as to enforce them with the proper intelligence and energy." The best means to accomplish this seems to be the embodiment of a short abstract of B. and R.'s report.

1. The inclination of the letters. *i. e.*, the angle which the downward stroke makes with a line perpendicular to the ruling of the paper, should be 35° to 40°.

2. The book should not be placed to the right, but as nearly as possible before the median line of the body, and so inclined that the direction of the writing rises from the left and below to the right and upward at an angle of 30° to 40°.

3. The position of the body as follows: (a) The upper part of the body remains upright as far as possible, so that it is supported by the spinal column, which is prevented from becoming tired by resting its lower portion against a support. (b) The transverse axis of the body, the connecting line between the shoulders, is parallel to the

longer edge of the table. (c) The body must not be pressed against the edges of the table, but kept at a distance of about 3 cm. from it. (d) The head, whose transverse axis is also parallel to the longer edge of the table, is lowered but slightly toward the latter. (e) The elbows must be kept a little lower than the edge of the table, and at an equal distance from the body. (f) The forearms, not the elbows, are laid upon the table in an almost symmetrical position, the book being placed in the median line of the body.

4. This position of the body is to be maintained during the whole act of writing, the upper part of the body and the upper arms to the point of support of the forearms upon the table's edge remaining quiet, and the hand and forearm alone performing the act of writing. (a) The movements necessary to produce the letters and single words must be performed by the joints of the fingers and the wrist. (b) The right forearm must not move its point of support upon the table's edge outward, as the writing advances along the line, but must revolve about it as a centre, thus describing an arc upon the table. In order to facilitate adherence to the particular directions (only given here in brief), it is advisable, especially in smaller children, to shorten the lines. (c) When a new line is begun, the forearm must describe the same arc backward with greater rapidity. As more lines are written, the wrist and finger-joints must be more and more bent.

5. The head also must not change its position; the slight rotation from left to right in writing is not injurious.

*In view of the deleterious consequences of a too close approach of the eyes in writing, and the fact that in the youngest children this is the case to a very high degree, producing most unfortunate results, which for anatomical reasons cannot be obviated by changing the regulations, the following suggestions are made:\**

1. Reading and writing, playing with small objects, in general work requiring close vision, should be forbidden in the schools for younger children, the kindergartens, etc., whence the children frequently enter school with eyes already myopic.

2. Instruction in writing should be limited as much as possible the first year; reading of distant objects (blackboards) should be first taught, then the books, and finally writing, the time not extending beyond half an hour the first years, and limited to five to ten minutes, followed by a pause of a few minutes.

3. The letters should be large, symmetry and beauty being of less importance.

\*Italics our own.—C. S. T.

4. The slanting lines of the blackboards and books should be omitted.

5. Writing, especially at home, should be limited as much as possible, and permitted only when the child's home is sufficiently light and airy.

6. The teachers should impress the children with the importance of assuming the correct attitude when writing at home. Instructions to parents would also be desirable.

According to Karwart Würzburg, the nutrition of the crystalline lens is impaired in atheroma of the carotid, a circumstance which materially favors the development of cataract. Embolism of the central retinal artery may also result.

Holstein, of Berlin, criticises the various reports on antiseptics in ophthalmology, and comes to the following conclusions:

1. The great danger of septicæmia, which threatens the body after severe surgical operations, need not be feared in ophthalmology, as the intra-ocular pressure and firm fibrous envelopes of the globe make septicæmic infection of the body very difficult. Therefore, antiseptic treatment is unnecessary.

2. The serpent ulcer, dacryo-cysto-blennorrhœa, and the specifically infectious conjunctival blennorrhœas, should be treated with antiseptics on account of their septic nature.

3. The strict antiseptic bandage, according to Lister, cannot be applied to the eye as it is not practical, as it irritates.

Boracic acid has thus far proven the best antiseptic. It does not irritate, but will disinfect.

Chisholm, of Baltimore, and L. Turnbull, of Philadelphia, recommend bromide of ethyl as the most perfect anæsthetic for short, painful surgical operations. Narcosis can be produced in a minute, and lasts two or three.

According to Mauthner, the electric light increases vision and color-perception. The arc-light is not steady, and therefore injurious; the incandescent is steady, and theoretically no objection can be made to it, but experience alone can decide as to its value.

Sakewitch found a few cases of extraordinary acuteness of vision among the soldiers of the 14th regiment of Russian dragoons, two cases with  $V = \frac{1}{2}\%$ , three with  $V = \frac{1}{3}\%$ , and seventeen with  $V = \frac{1}{4}\%$ .

According to Mari, forty centigrammes of santonin are sufficient to produce an effect lasting twelve hours. Bright surfaces appear a greenish yellow; dark ones, especially shadows, violet; red assumes a purple tinge; yellow seems pale; blue has a

greenish tinge; violet and purple become darker; orange seems pink; greenish-yellow is changed to grey. The spectrum is shortened, especially at the violet end. In a violet-blind person the whole spectrum was displaced.

Dobrowsky calls attention to the fact that most of the scholars of the Ural high school are children of inhabitants of the prairies, to which must be ascribed their acuteness of vision and the rarity of myopia, and not to the favorable hygienic condition of the schools.

Königshöfer says the direction of the writing is entirely immaterial, as far as the laws governing the movements of the eye are concerned. The sole cause of the various bad attitudes of the body is the attempt to find the most comfortable position of the wrist and fingers.

Makrocki saw several little nodules in the upper lid of both eyes of a lady. After incising the skin over them, several well formed lashes were extracted.

Berger describes two (extremely interesting and instructive) cases of paralysis of the acoustic and fifth nerves, with paralysis of the facial nerve, due to the caries of the petrous portions of the temporal bone. In one of the patients the cornea of the affected side had remained intact, though without sensibility; in the other, there was neuro-paralytic keratitis.

Hasner observed a paralysis of the left oculo-motor nerve in a girl seventeen years of age, which always occurred, for the four last years, as soon as menstruation began, and lasted for three days. Hyperæmia, due to menstruation, at the origin of the left oculo-motor nerve, was probably the cause, producing transient paralysis by pressure.

Thompson observed painful blepharospasm, and spasm of the ciliary muscle, after exposure to the electric arc-light.

De le Peña found an echinococcus behind a highly diseased and blind eye, which he had enucleated. Once before he had noticed a similar case. According to him, echinococcus passes through three stages of development, presenting the following symptoms:

1. Slight exophthalmus, with V. normal and tension normal, slight and transient pains.

2. Increased exophthalmus and decrease of vision and high tension.

3. Marked exophthalmus, dislocation of globe outward—complete loss of vision, suppuration of the cornea.

P. Barabaschew reports another interesting case. Patient twenty-seven years of age, formerly a soldier. Marked echinococcus exophthalmus

of right eye, chemosis painful, necrosis of cornea, V = 0, choked disc, the orbit filled with a smooth, tense tumor, distinctly fluctuating and dislocating the globe downward and outward. "In 1877, while he was a soldier, a shell exploded near him, and he became unconscious. After half an hour he recovered, when he noticed that vision in right eye was greatly impaired. Two months later the eye gradually began to swell. Diag. by exclusion; echinococcus of the orbit. When punctured f.  $\frac{3}{8}$  viiss. of colorless liquid was discharged (tracts of albumen, much Na. Cl.). After the puncture, severe reaction, œdema extending to the temple, lasting several days. Operated by making an incision at the upper inner edge of the orbit, preserving the globe. Fifteen larger and smaller echinococci were removed, varying in size to that of a pigeon's egg, and finally the original cyst. After the operation, severe reaction and slow recovery (as also in another case described some time ago by the same author).

Parigot, of Lyons, (Ferrier and others) recommends *inoculation against pannus*, and bases his claims on five cases which he cites. The pus should, however, be taken at the chronic stage of of blennorrhœa, as the affection produced is the less severe.

Wecker, of Paris, has made a series of experiments with the *infusion of jequirity* recommended by him for producing purulent ophthalmia to cure trachoma, and has arrived at the following results: Undoubtedly the infusion produces a purulent inflammation of a croupous character, the intensity of which can be regulated by the number of applications. The granulations rapidly disappear, and even if it should be necessary to produce this inflammation several times, the treatment is less

disagreeable and dangerous than inoculation. The cornea is not endangered. W. says it is especially indicated in the torpid forms of granular conjunctivitis (trachoma). Wecker and Moura, of Brazil, claim priority in the use of jequirity.

Deuffe, Paris, reported at the Acad. of Med. de Belgique, March 31, 1883, on his *experiments on jequirity*, and to the conclusion, "the inflammation produced by it fails to accomplish any therapeutical results."

Gruening, New York, reports two cases in which he used *jequirity with excellent results*. One was a girl of 19, the other a man of 83.

Mazzà applied *jequirity in thirty cases of trachoma*. Excellent results were obtained in five severe cases in which the disease had lasted four years, and there was extensive pannus; the cornea became perfectly clear. In five other cases improvement was not so marked, while in fifteen others no changes whatever took place; in the remaining five cases the result was absolutely negative. He never saw it make a case worse.

Paggi succeeded with jequirity in one case of trachoma, but failed in a second.

Ponti also applied *jequirity in four severe cases of trachoma and pannus*. Results were excellent, especially as to the clearing of the cornea. Besides the usual symptoms, he observed in two cases considerable salivation, and in one profuse perspiration and nausea at the height of the inflammation.

Simi obtained an excellent result with *jequirity in a case of mixed trachoma*. The disease had lasted two years, and had not yielded to various methods of treatment.

*Tuberculosis of the conjunctiva* has been seen in seventeen cases, so also condylomata.

