
(1) In Egypt infections with acute ophthalmia and trachoma usually occur simultaneously; it is therefore difficult to distinguish the earliest changes in the conjunctiva produced by trachoma alone. The appearances usually seen are those of an acute inflammatory infiltration of the sub-epithelial tissue. There appears to be growing evidence that the earliest sign of trachoma is the presence in cells of the conjunctival epithelium of Halberstaedter-Prowaczek Körperchen (H.P.K.). The sub-epithelial infiltration consists of lymphocytes, mononuclear leucocytes, plasma cells and histiocytes, which appear in that order or about the same time. The presence of polymorphs characterises a mixed infection.

Marked papillary hypertrophy of the conjunctiva, with interpapillary epithelial crypts are always developed early, although they may not be obvious on clinical examination.

The earliest stage of the disease, therefore, is seen to exhibit the signs of a sub-acute or chronic inflammation.

The first signs of follicular formation occur at the same time in the sub-epithelial infiltration in the tarsal and retrotarsal conjunctiva, but they are larger in the latter situation. The follicles characteristic of *Tr. Ila* therefore begin to develop at the same time as *Tr. I* follicles, but the latter are definitely recognisable before the former owing to the difference in the anatomical structure of the two parts of the conjunctiva.

The trachoma follicle is indistinguishable from the follicle of follicular conjunctivitis.

A typical early follicle shows a fairly well-defined peripheral zone of lymphocytes which stains darkly as compared with the central region. No plasma cells are seen in the peripheral zone, and no capsule can be distinguished. Older trachoma follicles differ from those of follicular conjunctivitis by the necrosis of the central cells. Large phagocytic cells, some of which contain nuclear débris, appear which are known as cells of Leber. Follicles of this type are seen principally at the upper edge of the tarsus and in the retro-tarsal folds; they may rupture spontaneously or on slight pressure, thereby differentiating the condition from follicular conjunctivitis. Besides rupture the follicles may disappear by absorption.
Trachoma

Wilson states that follicles are invariably found in trachoma but that they may be obscured by the sub-epithelial infiltration; this is especially the case in Tr. IIb.

The replacement of the sub-epithelial infiltration by cicatricial tissue may commence quite early while the follicles characteristic of Tr. I and Tr. IIa are still present. Islands of trachomatous infiltration surrounded by a cicatricial network are common in quite old cases of Tr. III.

The epithelium becomes thin and stratified.

The condition which in Egypt is called "post-trachomatous degeneration (P.T.D.) is common in Tr. III, and is the result of necrotic changes in epithelial debris deposited in the interpapillary crypts previously mentioned. Other degenerative changes may be found in the lids, hyaline, calcareous or bone-formation. As cicatrisation progresses entropion and trichiasis are found in a large proportion of cases.

In the final stage of trachoma, Tr. IV, the sub-epithelial layer is replaced by fibrous tissue which is adherent to the tarsus, and the epithelium is thin and stratified.

The author is of opinion that the early and important trachomatous changes which occur in the upper part of the corneal limbus are the result of direct infection from the conjunctiva of the upper lid, thereby differing from Michail and others who believe that the extension of the trachomatous process from the conjunctiva to the cornea proceeds by way of the fornix and bulbar conjunctiva. The invasion of the cornea by an inflammatory exudate is between the epithelium and Bowman's membrane, but the latter is often destroyed in severe cases. The new vascular channels which accompany the cellular infiltration remain permanently, either occluded or patent, as evidence of previous trachomatous change, after all the infiltration has been absorbed.

In a discussion, after reading the paper abstracted above, the author said "I am entirely in disagreement with what MacCallan has recently written on this subject. His so-called bleb-like excrescences or Tr. IIa follicles are, I believe, nothing more than large (not dilated) trachoma follicles in which necrosis has taken place in the centre and which rupture readily on pressure. In my opinion there is no evidence whatever neither anatomical, clinical or pathological for the statement that they are the result of blockage of the ducts of the Meibomian gland. It is perfectly true that the lobules of these glands do sometimes become dilated but in my experience never to the extent of producing a bleb through the dense fibrous tissue of the tarsus. Moreover it is not on the tarsal conjunctiva but at the upper edge of the tarsus and in the retro-tarsal folds that one usually finds expressible
follicles and here no Meibomian glands exist." It should be noted that it was Pulvertaft who made the above pathological observation, giving priority to Michail and to Birch-Hirschfeld.

A. F. MacCallan.


(2) During the period 1927-29 Bruck has examined 500 patients with pannus, using the slit-lamp and in 16 of them he observed fatty changes in the cornea. The affected part is usually central, the opacities appearing first below the pupillary area and spreading upward. At first they consist of white spots with distinct outlines, lying along the vessels mostly at the bifurcations, they then coalesce into irregular plaques which in time assume a yellowish tinge. Some of the vessels of the pannus become congested, tortuous and slightly bluish; near the centre of the cornea they divide to form a rich capillary network in the region of the deposits which form a kind of sheath round the walls of the finer blood vessels. It may take a long time for the deposits to absorb, and when they do, the process is accompanied by obliteration of the lumen of the vessels whose walls become transparent.

Some of the author's cases were treated by corneal transplantation, thus providing material for histological examination of the affected cornea. Fat was found in the superficial and deeper layers. The smallest granules occurred within the protoplasm of the corneal cells, the larger ones between the lamellae. With regard to pathology, there are two main factors to be considered,

(1) An increase in the amount of fat in the fluid penetrating into the tissues.

(2) Retardation of the circulation of the blood.

Both these factors are involved in other fatty changes of the cornea—*e.g.*, arcus senilis and the fatty deposits sometimes seen in old interstitial keratitis. The increase of fat in the blood has a constitutional basis, possibly associated with some endocrine disturbance, a fact which accounts for the relative rarity of fatty changes in cases of trachomatous pannus.

F. A. W-N.


(3) Oguchi, Majima and Sekiya have continued their researches on the aetiology of trachoma with the following results:

1. The tissue from a patient with acute trachoma, which has been found to contain Prowaczek-Halberstaeedter Körperchen was
triturated with a 1 per cent. aqueous solution of beef testicle in an ether extract, according to the directions given by Oba. This emulsion was injected into the testicles of rabbits. After a few days swelling and hardening of the testicles appeared which reached its climax after five or six days. Within two or three weeks the inflammation disappeared. If, within one week from the time of the injection, a piece of the testicle is removed and is injected into the testicle of another series of rabbits, following the same procedure, the result is always the same. In this way propagation of the virus is effected, and the virulence increases gradually so that finally a necrosis of the testicle is effected.

2. Bacteriologically the testicles were found to be sterile. Histologically, growing Halberstaeder-Prowaczek Körperchen can be seen in certain reticulum-like cells of the testicular parenchyma, representing part of their cycle, if thin frozen sections are stained according to the authors’ own modification of the Unna-Pappenheim method. They are like rods or spores (Lindner’s initial bodies) or like elementary bodies. A film preparation of the testicular tissue gives similar results. The appearance of the H.P.K. in the testicles varies with the degree of inflammation, and one week after the injection they begin to disappear. In this stage the propagation of the virus becomes difficult. This fact strengthens the belief upon which the existing hypothesis of the authors rests, that the inclusions in the cells originate from certain micro-organisms and that they are a kind of virus colony. Further it might be thought that these micro-organisms might produce the inflammation in the testicles.

3. Culture experiments with inflamed testicular tissue on artificial media have been unsuccessful.

4. The propagation of the material obtained by multiple propagation of the virus-containing tissue of the testicles is certainly possible in the testicles and in the eyes (conjunctiva, anterior chamber, vitreous) of rabbits and monkeys, and in the tissue of the conjunctiva H.P.K.-like bodies may be found.

5. The injection of a tissue emulsion of chronic trachoma, in which no H.P.K. could be found, into the testicles causes not acute trachoma but only a slight inflammation, or none at all, while propagation is also impossible.

6. When virus containing tissue of the testicles of rabbits or monkeys is rubbed into the human conjunctiva affected by chronic trachoma an aggravation of the trachoma occurs but inclusions in epithelial cells have not yet been found.

7. Inclusion conjunctivitis of the new-born, swimming-bath conjunctivitis and the so-called acute trachoma with inclusions might
be similar diseases and are all produced by H.P.K. which originate in the genital tracts. It might be better to call them all inclusion conjunctivitis or, according to Lindner, paratrachoma.

8. H.P.K. can only be found in inclusion conjunctivitis (paratrachoma). If they are found in other diseases a mixed infection must be considered.

9. The connection between trachoma and paratrachoma may be very close and complicated and needs further investigation.

A. F. MacCallan.


(4) In these two papers Cornet and Keller call attention to a form of trachoma which appears to differ considerably from that commonly found elsewhere. Both describe trachoma affecting the upper cul-de-sac only and running its course without any affection of the cornea. This is very different from MacCallan’s view, according to which the corneal invasion is diagnostic of trachoma and without corneal invasion there is no trachoma. According to Cornet about one third of his cases show no corneal complication. Keller goes even further; he states that there is no such thing as trachomatous keratitis; so long as the cornea retains its normal sensitiveness, there are never corneal lesions, however severe the trachoma. Only when the cornea is to some extent anaesthetic do lesions follow. He seems to regard all pannus as luetic in origin.

Harold Grimsdale.

(5) Busacca, Archimede (San Paulo, Brazil).—Have the nodules produced by intravitreous inoculation of trachomatous material a specific character? (Les nodules obtenus après inoculation intr vitréenne de matériel trachomeux sont-ils spécifiques?). Ann. d’Ocul., Vol. CLXXIII, p. 528, 1936.

(5) Busacca investigated the reaction of the retinal neuro-epithelium to the trachomatous virus, which is known to possess a lytic action on epithelial cells and in addition gives rise to the production of follicles consisting of reticulo-endothelial cells. He inoculated small pieces of trachomatous pannus into the vitreous of rabbits, guinea pigs and chickens. At first no bacteriological precautions were taken and many animals developed...
panophthalmitis. Later, the author tried to eliminate mixed infection by filtering the trachomatous material or by treating it for eight or sixteen days with glycerin. Glycerin does not destroy the virus. The eyes of the animals were subjected to an antiseptic treatment.

Many inoculated animals did not show any reaction at all. Only two out of more than a hundred animals showed the development of a pannus similar to that seen in human trachoma. The intraocular changes could be classified in three groups according to the degree of the reaction.

The author mentions retinal degeneration as a sequel to his inoculations, but it is the choroid which shows the most marked reaction.

The first type of reaction is nothing but a mild uveitis which clears up in some weeks. The choroidal vessels are encased with cells produced by the adventitia of their walls.

A sub-acute uveitis leading to retinal detachment is described as the second type of reaction. The perivascular encasing of the choroidal vessels is much increased and amounts to the formation of nodules round the large choroidal vessels. Eventually, shrinkage of the globe sets in.

The third type of reaction corresponds to the occurrence of an acute panophthalmitis. Again, the typical nodules develop in the uvea.

By intravital staining with trypan blue the reticulo-endothelial nature of the cells, which form the nodules, could be ascertained. The framework of the nodules is not formed by these cells but by the fibres of the tissue in which the nodules develop. By and by, these fibres are pushed aside and give the appearance of an envelope.

The author has never succeeded in finding in these nodules Rickettsia-like bodies, the presence of which he could demonstrate in human trachoma and after trachomatous inoculation into the testicle of the guinea pig. von Szily produced similar nodules by intravitreous injections of an emulsion prepared from eyes affected with sympathetic ophthalmitis. Further, these nodules could not be differentiated from those which occur after the inoculation of non-trachomatous glycerinated tissue. Therefore, the author is of opinion that the nodules represent an unspecific reaction of the adventitia of the vessels.

Humphrey Neame.
II.—CONJUNCTIVA


Vito has observed three cases in which a troublesome unilateral conjunctivitis was accompanied by warts on the free margin of the lid, and was relieved by the removal of the warts when other means had proved inefficient. He thinks that, taking into consideration the infective nature of these tumours, there can be little doubt that the conjunctivitis was caused by the virus carried into the conjunctival sac by winking. Cavara has shown that conjunctivitis may be caused by infection in the presence of molluscum, and has by experiment proved the relation. The author has tried to confirm his hypothesis by similar experiments; he triturated warts in physiological solution and dropped the resulting liquid into the conjunctival sac. A slight conjunctivitis followed, more marked in the unaffected eye of one of the three patients; this man might have been sensitised by the previous condition.

HAROLD GRIMSDALE.


In a patient who returned from the Ivory Coast a short immobile onchocerca volvulus was found embedded in the bulbar conjunctiva of one eye. In addition, a number of small globules were to be seen in both eyes. The worm and some of the largest globules were excised. No embryos could be found in the globules, which presented the histological appearance of a granuloma formed round a foreign body. Joyeux and his collaborators supposed that the foreign body was an embryo which had disappeared. In the following months the patient developed three nodules in other parts of his body. The nodules were excised and found to contain a large number of worms. However, the eosinophilia persisted though no other manifestation of filariasis appeared in the following weeks during which the patient could be observed.

HUMPHREY NEAME.
III.—CORNEA


Liesegang was the first to describe the ring-shaped opacity that is produced by applying a drop of silver nitrate on a gelatine gel mixed with pot. bichromate; the same result was so uniformly obtained with other substances in other colloids that it became known as the Liesegang's phenomenon.

Sugita applied this experiment to the cornea (also a colloid membrane) of living rabbits, producing a wound with the galvano-cautery and then touching it in the centre with sulphuric acid, whereby a disc-shaped opacity quickly developed round the cauterised area.

This disc-shaped opacity is due to the centrifugal diffusion of the acid and the albumin which it has precipitated and decomposed, producing many Liesegang's rings as a specific phenomenon in colloid membranes.

The clinical picture of the disc-shaped opacity, therefore, is made up of a series of these rings, which consist mainly of precipitated albumin (Eiweiss).

This experimentally produced clinical picture corresponds to that of keratitis disciformis seen in man and the histological appearances found in both are very similar. It is held, therefore, that the products of micro-organisms that have penetrated the cornea in human keratitis disciformis set up the same biochemical processes, with the formation of Liesegang's rings and the development of the characteristic clinical picture.

The ring- or disc-shaped opacity seen in ulcus serpens, aspergillus keratitis, Dimmer's keratitis, foreign bodies in the cornea and so forth is held to be also due to the formation of Liesegang's rings.

THOS. SNOWBALL.


Heinsius tested the action of cod liver oil and the vitamin A which it contains on a series of rabbits' eyes after producing
abrasions of the cornea, and found that on local application they had a definite accelerating effect on the regeneration of the corneal epithelium, thereby confirming the clinical results of the treatment of wounds by these agents.

It was found too that there was no material difference in the action of cod liver oil from that of vitamin A by itself, from which it was inferred that this vitamin was the sole factor in cod liver oil that has this effect on the formation of new epithelium.

Experiments seemed to show that the good effect of vitamin A depends on its concentration, being better with the weaker solutions.

This vitamin probably supplies the material necessary for the rebuilding of the cells—possibly the purines that favour the formation of cell nuclei.

THOS. SNOWBALL.

(3) Moretti (Catania).—Acute haemorrhagic bulla of the cornea. (Bolla emorragica acuta della cornea). *Boll. d'Ocul.*, December, 1936.

(3) Moretti records a very unusual happening in the course of chronic glaucoma. The patient, who was under periodical observation, and had been seen by the author shortly before, was suddenly seized by acute pain in the left eye; this was accompanied by the appearance of a large red mark on the cornea. There was no breach of the epithelium—the mark was a vesicle filled with blood. The epithelium seemed to be raised from Bowman's membrane. A small vessel ran from the limbus to the bulla; the author concluded that the bursting of this vessel had allowed the escape of blood which stripped the epithelium up, giving rise to the bulla. As the eye was blind and the patient was suffering intense pain, the eye was enucleated. The condition has no likeness to bullous keratitis.

HAROLD GRIMSDALE.

IV.—LENS


(1) Whalman describes the medical treatment of obesity by the administration of the sodium salt of 2—4 alpha-dinitrophenol. He reports the ocular findings in 17 patients who developed bilateral cataract as a result of this treatment. Sixteen of these were females and the age incidence was between 25 and 50 the majority
being 25 to 40 years of age. The dose of dinitrophenol received was that which Tainter and his co-workers had used; 100 milligrams daily for one week followed by 200 milligrams daily for several weeks and then a gradual increase until toxic symptoms indicated the advisability of reducing the dose or stopping its administration.

Lens opacities developed during treatment and in some cases several months afterwards. The cataract resembles the complicated type and rapidly becomes mature in from 7 days to 6 months the average being 6 weeks. The earliest ocular signs are an aqueous flare, a spotty, dry, lustreless state of the anterior lens capsule beneath which fine grey cloudy opacities formed. Later irregular pearl-like opacities occurred in the deeper layers of the cortex and a polychromatic lustre became evident in the zone of specular reflection in the posterior cortex. The lens swells and becomes completely disintegrated. The intra-ocular pressure was raised in some cases. Operative treatment by linear extraction was effective in the restoration of vision. The vitreous remained healthy.

H. B. Stallard.


(2) Spaeth reports the case of a nurse aged 37 years whose vision became affected after taking 3 grains of dinitrophenol daily for 11 months. Within 6 weeks vision was reduced to perception of light and the lenses were converted into sacs containing floating yellow and chalky deposits in which the brownish nucleus had gravitated downwards. The patient became apathetic, morose, mentally unstable and depressed and after operation she developed signs suggestive of parathyroid tetany. She improved on calcium therapy and parathyroid injections.

H. B. Stallard.

(3) Bruno (Sassari).—The ciliary insertion and the probable histological significance of the suspensory ligament of the lens. (Sulla inserzione ciliare e sul probabile significato histologico dell fibre delle zonule dello Zinn). Ann. di Ottal., June, 1936.

(3) Bruno finds that the fibres of the zonule are built up of fibrils which spring from the pointed surface of elongated cells lining depressions on the ciliary body.

It can be seen that these fibrils are continuous with filaments which run over the body of the cell to its base.

Harold Grimsdale.
(3) Basile (Naples).—The origin of the ring of pigment behind the lens. (Contributo alla conoscenza della genesi dell'anello Pigmentato retrolenticoIare). Boll. d'Ocul., July, 1936.

(4) The appearance of a ring of pigment on the posterior surface of the lens is not common. Basile has observed two cases, in one of which it was associated with Krukenberg’s spindle. The ring was incomplete; the patient was suffering from early tabes dorsalis. In the second case a successful operation for detachment of the retina was followed by the appearance of an incomplete ring of pigment on the posterior surface of the lens; this ring in the course of a year almost disappeared. The cause of this pigmentation is the disorganisation of the uveal pigment as a result of disease or of surgical interference.

HAROLD GRIMSDALE.

V.—GLAUCOMA


(1) Ourgand, Sedan and Roux claim in conformity with Lagrange that the risk in operation on a chronic glaucomatous eye with a considerably restricted field is usually exaggerated. The loss of the central vision as a sequel to a fistula operation is very rare. The operation will much more likely preserve or enlarge the field, though recovery can be claimed in the majority of the cases only after some years. Five cases are recorded in which Elliot’s trephining or Lagrange’s sclerectomy have enlarged the field and even improved the central visual acuity.

HUMPHREY NEAME.


(2) Though in general, glaucoma is a disease of advanced years, no age is immune from it; occasionally it is met in those who have just reached puberty, and differs greatly in such cases from the infantile form, buphthalmos. Cappetta and Motolesse give the history of 17 cases which they have observed among the 1,225 cases of glaucoma at the Clinic at Florence during the years
from 1925 to 1934. The youngest was aged 11 years and none was over 39 years; 10 were between 30 and 39 years. Of these 17, 12 were males and 5 females. Juvenile glaucoma is most commonly chronic or prodromic; the authors decide that there is a true prodromic glaucoma, and not merely a prodromal stage of chronic or acute glaucoma.

They point out that many of the patients suffering from juvenile glaucoma are myopic and think that the enlargement of the eye is due to the increased intra-ocular pressure of the disease. As to the aetiology, they find that heredity has considerable importance; they give a tree, after Plocher, which shows 15 cases of glaucoma, mostly juvenile, among 45 individuals. Hereditary syphilis also, they consider of great influence. Of the five females, two had an acute attack; of the men, only one had acute glaucoma. In all cases some form of sclerecto-iridectomy was performed, and in all successfully.

Harold Grimsdale.


(3) Santonastaso has examined 13 cases of hydrophthalmos; 9 cases were bilateral and 9 were males. One eye, of a child whose other eye was normal was removed and examined microscopically. In this case the canal of Schlemm was almost entirely absent; only in a few sections was it possible to see in its place small spaces with thin walls which seemed to represent the canal. The spaces of Fontana were nowhere recognisable. The iris was everywhere thin and atrophic, and pushed backwards. The vessels in some cases had abnormally thick walls. The author holds that the malformation is probably due to hereditary syphilis. He has found evidence of this in a majority of the cases and has suspected it in others in which evidence for one reason or another could not be obtained. The alteration in the vessel walls is, he thinks, specially indicative of some hereditary taint.

Harold Grimsdale.


(4) Contino describes under this name a condition in which the anterior chamber is deep, the pupil only slightly dilated, and the iris oedematous and showing bunches of dilated vessels.
Since high tension with a deep anterior chamber indicates a loss of balance between secretion and excretion of the aqueous, and since the vascular condition of the iris may easily give rise to hyphaema, the author thinks the name which he has given to this condition, to be justified.

In these cases an immediate iridectomy will probably be followed by abundant haemorrhage but if mydriatics and vasoconstrictors are used first, until moderate dilatation of the pupil has been secured, an iridectomy will be of great value.

The author states that in the cases observed by him, there was no preceding iridocyclitis, though in the later stages synechiae form. (The condition seems to the reviewer to resemble those cases of thrombosis of a retinal vein which are followed by the development of bunches of dilated vessels on the iris and high tension.)

HAROLD GRIMSDALE.


(5) Cattaneo holds that the various conditions under which tension is raised in iridocyclitis, have not been sufficiently differentiated. He would group them under three heads: (1) Those eyes in which there has been previous high tension, very often unrecognised; (2) Those in which tension rises with the onset of iridocyclitis having been normal before; (3) Those cases in which tension rises, after the formation of synechiae.

He concludes that in the first group, mydriatics are contra-indicated; miotics should be used. In the second group, mydriatics should be pushed, sometimes paracentesis is necessary. In the third group operation is often required, iridectomy or sclerectomy.

HAROLD GRIMSDALE.

VI.—MISCELLANEOUS


(1) Nordmann and Payeur state that for a quick routine examination of the light sense a modification of the photographic exposure meter made by Dren in Vienna has proved very useful. The apparatus is a simple device by which a white and a green
transparent disc in a tube can be observed through an ocular with lateral occluders. The other opening of the tube is illuminated by day-light or better by an artificial source of light. The patient covers one eye with his hand. The other eye looks into the tube. The illumination of the discs in the tube is gradually reduced by turning a cylinder which is connected with a diaphragm. The patient has to focus the white disc. The green disc will soon disappear when the cylinder is turned and the aperture of the diaphragm is diminished. Some moments later it will reappear as dark adaptation increases. The illumination is further reduced until no reappearance of the green disc occurs. The degree to which the size of the stop can be reduced within 20 seconds is a measurement of the adaptation. A comparison has to be made with a normal person, e.g., with the surgeon who has been exposed for some minutes to the same illumination. It is advisable to make three examinations after preliminary instruction of the patient.

Controls were made with Nagel's adaptometer. The patients were homatropinised and subjected to a standard illumination before they were examined. The findings of the small adaptometer were confirmed in 100 per cent. of patients with normal and in 96 per cent. of patients with pathological adaptation.

Humphrey Neame.


(2) Myopia after injury is due to one of several causes; it may be due to spasm of the ciliary muscle; to relaxation of the suspensory ligament; to subluxation of the lens; or to increase of length of the antero-posterior axis of the globe. In most cases the myopia is of low degree, not more than −2.0 or −3.0 D. and is rapidly lessened to disappear within a few days. In one of Marucci's cases, however, it was no less than −10.0 D. In this case a transitory lowering of tension was followed by acute glaucoma for which operation was performed; a month later the vision in that eye without correction was 7/10. The author thinks that in all these cases spasm of the ciliary muscle was an important factor in the production of the myopia assisted in some by subluxation of the lens; the fact that in some instances the myopia increased after the instillation of eserine, points towards spasm of the ciliary muscle. In all of the cases, there was noted mydriasis in part due to paresis of the nerves in part perhaps to laceration of the sphincter as a direct result of the blow.

Harold Grimsdale.

(3) Agnello gives the history of a case of monocular diplopia in which no peripheral cause was found. The patient, a woman aged 52 years, stated that she always saw two images with the right eye when the left was covered. The image of a candle was seen single up to a distance of 10 inches; beyond this, the images multiplied until they formed a ring round the true; the author found that the right eye also gave multiple images of which one was red and appeared in front of the others; there was no local abnormality to account for the condition. Searching the past history, the author found that she had undergone removal of the ovaries at the age of 40 on account of flooding and that the diplopia had appeared after this; he attributes the symptoms to the disturbance of the general nervous system following the suppression of the function of the ovaries.

HAROLD GRIMSDALE.


(4) Rosenbaum gives a very full report of a case of malignant exophthalmos in a Jewish male subject of 46 years of age. A searching general examination entirely failed to discover the cause. The only physical abnormality discovered was an odd state of affairs in the naso-pharynx. "On each side of the posterior margin of the vomer there was a smooth swelling, apparently hanging down from the anterior sphenoidal wall, projecting into the naso-pharynx, and encroaching on the pharyngeal apices of the Eustachian tubes." X-ray examination showed a soft mass in the naso-pharynx. There was no bony absorption and a biopsy of the tissue gave negative results.

The patient's right cornea became ulcerated from exposure and a Naffziger operation was performed with an ultimate good result. A month after this major operation had been performed, the patient suddenly developed a post-auricular abscess, which was being opened and drained when the man suddenly became unconscious. This alarming state of affairs persisted for two days. It was attributed to anoxaemia, possibly aggravated by the abnormality in the naso-pharynx. On recovering consciousness, the patient did well, and three months later returned to work. The Naffziger operation consists in decompressing the orbits. " Under avertin and ether a bilateral osteoplastic flap was reflected. The dura was elevated to expose the floor of the anterior cranial fossa"
as far back as the lesser wing of the sphenoid. The bone of the floor was removed as widely as possible, unroofing each of the optic canals and carrying the removal laterally and posteriorly as far as possible. The orbital fascia was widely incised and reflected. The optic nerves and globes were exposed. When as wide a decompression as possible had been obtained, the bone flaps were returned to position, but not tied in place. The scalp flaps were closed in two layers."

As soon as the floor of the skull was removed, decompressing the orbits, a little tissue herniated into the openings and continued to bulge through the openings as the bone removal was continued. No definite pathological alterations could be made out. A small piece of muscle was removed from each side for pathological examination.

R. R. J.


(5) Sena classifies cysts of the iris as traumatic, parasitical and spontaneous. The latter consists of two groups (a) congenital and (b) acquired; they have also been called idiopathic.

Congenital cysts of the anterior layer of the iris, and cysts of the stroma, usually lie at the angle of the anterior chamber. Their growth causes subjective symptoms of pain, iridocyclitis and glaucoma. The histology of these cysts varies in different cases; the formation is usually thought to be due to a cystoid change in endothelial or epithelial cells, which have been included in the iris during embryonic life.

Spontaneous cysts of the posterior layers of the iris may be due to adherence of the ciliary processes to the posterior layers, forming a cystoid space. Other authors, however, state that these cysts are always inflammatory.

Cysts occurring superficial to the posterior layer of the iris have been called intra-epithelial; if these cysts lie near the angle of the anterior chamber they may not be noticed for some time, but if they develop near the pupillary border they grow into the anterior chamber, and are connected with the pigment epithelium by a broad pedicle.

During development of the embryo, at a certain stage, there normally exists between the layers of iris pigment a small space, and it is thought that the persistence and abnormal development of this gives rise to these cysts.

Another theory is that they are due to the detachment of the posterior pigment epithelial layer from the anterior, or that it is
a local persistence of the ependymal intra-ocular space of the embryo.

These cysts are benign in character, but they are dangerous on account of the production of a secondary glaucoma.

Treatment can be medical or surgical. Cases have been recorded where cysts have disappeared after the use of atropine or eserine, but this is very exceptional. Injection of substances such as tincture of iodine is dangerous, as the lens may be injured. Radiotherapy and electrolysis have shown good results. Iridectomy, removing the affected part of the iris, is the simplest and most effective method of treatment.

The author describes some cases and their mode of treatment by other ophthalmologists.

His own case was that of a girl, aged 12 years, who for some time had been complaining of slight photophobia and diminution of vision. She was a well-developed girl and nothing abnormal was found, except for some pigmented naevi on the skin of the abdomen and the shoulder.

On examination of the eyes, it was found that in the right eye the anterior chamber was deep, and was filled with tiny cysts situated on the pupillary margin, these cysts were dark brown in colour, and much darker than the rest of the iris. It was very difficult to find the pupil except with the slit-lamp. When examined with the slit-lamp the cysts were found to be very distended and transparent. On instillation of atropine the pupil dilated and the exact position of the cysts was seen.

The condition of the left eye was very similar, but the cysts were more numerous.

Nothing else abnormal was found, the visual acuity was 9/10, and was not improved with glasses; the ocular tension in both eyes was 22mm. The author did not consider that operative treatment would be beneficial, and for the moment he is watching the case.

E. E. Cass.

(6) Ciotola (Naples).—Argyll Robertson pupil, unilateral, a sequel to herpes frontalis. (Sintoma di Argyll Robertson unilaterale consecutivo a zona oftalmico). Boll. d'Ocul., December, 1936.

(6) Ciotola records a case of this rare occurrence. He discusses shortly the various hypotheses of the causation of the Argyll Robertson pupil and concludes that in his case the virus of herpes had attacked some small focus in the brain, perhaps in the posterior commissure.

Harold Grimsdale.