is defective lighting is quite overwhelming. They say: "All that we can do is to clear up a misunderstanding which seems to have misled Dr. Freeland Fergus and others. That is that the electric hand-lamps at present in use give a good illumination. In actual fact this illumination is extremely defective, and not much better than that of the older form of oil safety-lamps. The better existing oil safety-lamps give more light than the ordinary electric safety-lamps." They point out that as a result of investigations by Professor Wheeler and Mr. D. W. Woodhead new forms of oil safety-lamps are now available which give from four to twelve times as much light as ordinary electric hand-lamps. The electric cap-lamp, on account of its being much nearer to the surface to be illuminated is much more efficient. Where the conditions as in America make their use quite easy nystagmus is unknown. The letter concludes: "But where hand electric-lamps are used the light is too far away to give satisfactory illumination and nystagmus is common. The list of cases quoted by Dr. Freeland Fergus serves only to illustrate this fact, and in reality supports strongly the conclusions of the committee, which are based, not on vague suppositions, but on definite photometric measurements. Dr. Fergus and others ask for a new medical committee on miners' nystagmus. We venture to think that if the report of the late committee is read carefully it will be seen that the proposed new committee is not needed."

In a previous annotation on the report of the committee (Brit. Jl. of Ophthal., Vol. VIII, p. 63) we concluded as follows: "Thus there would seem to be a disease, miners' nystagmus, the nature of which we, as ophthalmic surgeons, can appreciate, accurately measure, and record; there is another disease, miners' psycho-neurosis, of which we, as ophthalmic surgeons, have no special knowledge." We do not see that the present correspondence tends to alter this view.

ABSTRACTS

I.—GENERAL MEDICINE


(1) Bhaduri states that retinal haemorrhage is of not infrequent occurrence in kala-azar, he refers to cases in the literature which have been reported from China and gives reports of three cases of his own. In his first case there was a flame-shaped haemorrhage
in the left eye and a pre-retinal haemorrhage at the posterior pole of the right; in his second case there was a large irregular haemorrhage in one eye between the disc and macula, involving the latter, while the last patient was a low myope with a single large haemorrhage in one eye.

All these patients were markedly anaemic, the colour of the haemorrhage was red and not dark in every case, the haemorrhages were single and of large size, they became absorbed quickly, in about six weeks to two months, and left no trace of their previous existence in the fundus; they were noticed as a rule during the afebrile stage.

The paper ends with a table contrasting the differences between the haemorrhages seen in kala-azar and malaria.

R.R.J.


(2) Bhaduri's case occurred in a male subject, aged 22 years; the diagnosis of kala-azar had been made about ten months previously; before this he had been treated for malaria without benefit. He was declared cured of his kala-azar after a four months course of treatment, during which he was given 22 injections of sodium-antimony tartrate. His eye symptoms began two months later with headache, lacrymation and burning pain, accompanied by failure of sight. His vision on examination was found to be 6/12 and 6/9 in the right and left eyes respectively, and this improved with a low minus cylinder to 6/9 in the right eye and 6/6 in the left. Radial cortical striae were found in each eye, the urine being normal. Eighteen months later the condition was found to be the same.

In a footnote the editor comments on the interest of this case. The report was submitted to Lt.-Col. Coppinger, who remarked that such cataracts in young persons from one cause or another are far from uncommon. They may occur in any condition of profound debility, *e.g.*, cholera.

R.R.J.


(3) This contribution is based on the case of a 76 years old patient with double chronic inflammatory glaucoma. A broad iridectomy was performed on the right eye. On the fourth day
after the operation the anterior segment of the eye began to get yellow and the colour gradually deepened until the sclera became a dirty orange and the cornea a light yellow in the periphery and lost its transparency. After about a month the discoloration began to disappear, the cornea clearing completely first, and after three months there remained just a faint yellow tinge of the sclera. The left eye was iridectomized three weeks after the right. A few days after the operation the anterior segment of the bulb showed a light yellow tinge which gradually deepened until the tenth day when it began to clear. A month after the operation the globe had recovered its normal appearance.

The excised pieces of iris were pathologically examined, the one from the right eye showing two superficial foci composed of massive collections of fat droplets, the one from the left eye a mild diffuse fatty infiltration of the walls of certain vessels. The slimy secretion from the right eye showed colourless globules, epithelial elements and leucocytes, all of which contained numerous fat granules.

The general examination of the patient revealed widespread arterio-sclerosis with moderate increase of blood pressure (Riva-Rocci 160/90) and an unduly high cholesterol content of blood.

Of eight other patients with arterio-sclerosis and heightened blood pressure, of whom four had one or other form of glaucoma, seven showed increased cholesterol content of blood. None had xanthomatosis bulbi. The four glaucoma cases were operated on but no xanthomatosis followed.

This investigation leads Busacca and Tattoni to conclude:

(1) Xanthomatosis bulbi is a disease closely connected with hypercholesterinaemia and brought about by an abnormal retention of blood cholesterol on the part of the ocular tissue.

(2) Cholesterinaemia or other aetiological factors (trauma) are not in themselves enough to produce xanthomatosis bulbi; a certain diathesis must be there in addition.

D. V. GIRI.


(4) In this paper Freeland Fergus sums up his reasons for opposing Professor Haldane's defective light theory as the cause of miners' nystagmus. His first objection, i.e., that the introduction of electric light has, in many pits, aggravated the disease is answered in a later number of the *Brit. Med. Jl.* by Haldane (see Annotation in this number) and is due to the inefficiency of the ordinary electric hand-lamp even in comparison with the old oil safety-lamp. His second objection is to the effect that no notice
has been taken of the paroxysmal nature of the disease. He says that the liability to relapse with considerable severity, even though the patient no longer works underground, lasts for many years. He further comments on the fact that Mr. G. L. Kerr tells him that he knows of six pits in his area in which oil safety-lamps are used and in which there is no nystagmus (Haldane deals with this in his reply, on which we comment in our annotation).

Fergus also asks why no explanation has been offered as to why there should be, as one of the symptoms, rotational movements of the eyes. He points out that nerve centres must, in his opinion, be irritated or disturbed before the rotation takes place.

He further insists that another feature that must be taken into account is that the disease seems to occur in epidemic form, that great disturbance of the heart's action is one of the chief symptoms, and that hemeralopia and nyctalopia are practically always associated with the disease. He gives notes of eight cases seen recently to illustrate his points, and comes to the conclusion that a further investigation is desirable. He considers that the investigators should include a neurologist and a pathologist and should be in the hands of persons competent to deal with vital statistics and with public health.

E.E.H.


(5) This paper was the opening paper in a discussion on the significance of retinal haemorrhages which took place at the 1926 meeting of the British Medical Association. Foster Moore begins his paper by acknowledging his indebtedness to the work of Dale, Richards, Laidlaw, and Krogh on the anatomy and physiology of the capillaries. He suggests the following as a reasonable classification of retinal haemorrhages, excluding such as are due to disease localized in the eye:

A. Disorders of Metabolism.
   1. Renal disease.
   2. Diabetes.
   3. Scurvy.

B. Diseases of the Haematopoietic System.
   1. Arterio-sclerosis.
   2. Severe anaemias (or severe cachexia).
   3. Leukaemias.
   4. Infective endocarditis.
   5. Vaquez's disease.
   6. Haemophilia.
C. Obstruction to the Venous Flow.

1. Thrombosis of the retinal veins.
2. Thrombosis of the cavernous sinus.
4. Papilloedema.
5. During birth.
6. Severe compression of the chest.

He points out that Krogh has shown that the capillaries are not merely passive dilatable tubes but that they are directly under nervous control through the actively contractile cells of Rouget which are incorporated in their walls, outside the endothelium. Foster Moore then states that it is evident that there are certain poisons which specially affect the capillary walls so that they no longer maintain an inviolate barrier against the passage of cells from within their lumen, and that toxins may be responsible for retinal haemorrhages. He suggests that defective nutrition of the endothelium determines the escape of blood, and that this may be brought about by abnormal constituents of the blood, or perhaps in the anaemias by the defective nature of the blood itself.

In the second section of the paper an attempt is made to classify haemorrhages from their ophthalmoscopic appearance in an endeavour to obtain some hint as to the mode of escape of blood from the vessels. The following eight types are enumerated: (1) flame-shaped; (2) rosette; (3) diamond-shaped with pale centres; (4) gross of mottled appearance; (5) pre-retinal or subhyaloid; (6) those of infective endocarditis; (7) those associated with subarachnoid haemorrhage; (8) cotton-wool patches. A detailed account of these varieties follows, and should be read in the original as further condensation would be of little value.

The third section of the paper discusses at some length the source of the haemorrhage. The author considers that leakage of blood from the arterioles occurs from the lodgment of infected emboli, as in infective endocarditis; from the capillaries, either from poisoning of the endothelium as in renal disease, or from impairment of its nutrition as in the anaemias; and from the venules from mechanical causes, as in a hindered venous outlet from the eye.

The final section of the paper deals with the changes that take place in retinal haemorrhages. As a result of numerous careful observations Foster Moore feels justified in stating that all haemorrhages simply fade away, gradually becoming smaller, and undergoing no other change in colour, but that the time taken for their complete disappearance varies enormously.
The paper is of considerable value as an effort to systematize a very important meeting place of ophthalmology and general medicine and should be read in the original.

In the subsequent discussion numerous cases of interest were described, but the author's views were not challenged in any way.

E.E.H.


(6) It seems somewhat open to question whether McCrea's deductions are in every case justifiable: with which remark the reviewer, having entered a caveat, will endeavour to synopsize the author's views.

A quotation will serve to put the argument before us. In a paper read before the ophthalmological section of the Royal Society of Medicine the author "drew attention to a type of haemorrhage in the retina causing blindness, the precise nature of which had not hitherto been recognized, and in consequence its treatment had not been conducted on proper lines. The lamentable result of this incorrect diagnosis and treatment is that a number of patients are condemned to a state of blindness from which they could have been saved. I gave to this state the name "retinal petechiasis" and I showed that the extravasated blood had exuded from unruptured vessel walls." After three-quarters of a century of intensive ophthalmoscopic examination these seem strong words, which are calculated to make the ophthalmologist wonder whether he is awake or dreaming. McCrea then states that retinal circulatory disturbances have hitherto been classified as: (1) haemorrhage attributable to rupture of the vessel walls in elderly people, due to degenerative changes and associated with high blood pressure; (2) thrombosis: and that for these two classes little can be done. At this point it seems pertinent to ask the author where he proposes to place those other haemorrhages such as traumatic haemorrhages, haemorrhages of adolescents, in renal disease, in pregnancy and probably others as well which do not seem to fall into either of the foregoing two categories nor yet into the third category of "retinal petechiasis" which he is confident should be isolated as a definite clinical entity and due to a focus of infection somewhere. He asserts that the clinical history, the ophthalmoscopic appearances, the prognosis and the response to treatment distinguish retinal petechiasis from retinal haemorrhage. Thus high blood pressure is not a factor in petechiasis, and the latter may occur at any time from middle age onwards.
There may be no evidence of vascular degeneration and the urine with one exception showed no abnormality in these cases. The author’s paragraph on the pathology of the condition cannot be considered satisfactory. He says that retinal petechiiasis is not the same as retinal haemorrhage since in the former the vessel wall is not ruptured and blood is exuded from a vessel with intact walls. But the author himself says that there is no evidence from pathological examination. He refers for confirmation of his theory to the three fine coloured plates which accompany the article. At this point one may refer to the criticism of McCrea’s claim made by Rayner D. Batten in a letter to the editor of the Lancet for July 9, 1927. Batten says that McCrea’s claim to have discovered a form of retinal haemorrhage not hitherto recognized cannot be allowed as an entity. The condition is fully recognized, he says, and is generally due to venous thrombosis. Batten presents a diagram of one of McCrea’s drawings and points out that this drawing shows that the cause of the “petechiiasis” is actually thrombosis of the superior retinal vein. To return to McCrea’s article: the author considers that “petechiiasis” is due to the action of toxins which cause relaxation of the vessel wall and he is satisfied that in the fifteen cases which he has reported sepsis was the cause. Septic foci, one, two or more, were found in each case, while good and rapid results followed their removal. These foci were found in teeth, tonsils, accessory sinuses, ethmoid, and in the urinary tract. With regard to the question of sepsis and thrombosis one may refer once again to Batten’s letter. “My criticism of Dr. McCrea’s case in no way detracts from the value of his paper in insisting on the septic origin of thrombosis as a cause of ‘retinal petechiiasis.’ The more common cause of partial venous thrombosis is taken to be arterio-sclerosis, which again may be septic or toxic in origin. With this is associated an anatomical factor. Thrombosis takes place where the vein is crossed by an artery. In Dr. McCrea’s case the branch is abnormally large and has compressed and displaced the vein, hence the thrombosis. It is a curious fact that the right superior temporal vein is the vessel most commonly affected by thrombosis, of which it will be noted Dr. McCrea’s case is another example. It is the thickening and hardening of the arterial wall in arterio-sclerosis that causes the obstruction to the venous circulation when it crosses the vein.” Batten also points out that a number of drawings illustrating the condition are on view at Hamblin’s Ophthalmic Drawing Department, 15, Wigmore Street, W.1.

ERNEST THOMSON.
II.—PATHOLOGY AND HISTOLOGY

(1) Koyanagi, Y., and Takahashi, T. (Sendai).—Cavernous atrophy of the optic nerve in cases of orbital tumour. (Kavernöse Sehnervenatrophie bei Orbitaltumoren.) Arch. f. Ophthal., Vol. CXV, 1925.

The experiments on rabbits, which are here recorded by Koyanagi and Takahashi, were carried out mainly to decide the question whether cavernous atrophy in the optic nerve, which has been observed in orbital tumour, should really be regarded, as Elschnig believes, as pathognomonic of glaucoma. In these experiments orbital tumours were produced by injecting a small quantity of an emulsion of actively growing rabbit sarcoma deeply into the orbit.

Their results are summarized as follows:

(1) In the rabbit the intra-ocular tension falls invariably and permanently, when the pressure of a growing orbital tumour is exerted directly on the eyeball affected. This fall in tension, which usually goes hand in hand with the increase in the exophthalmos, grows more and more marked, until in the later stages it becomes no longer possible to measure the tension with the Schiötz tonometer. At no period is even a temporary rise in the tension observed.

(2) In about one-half of the cases that were examined microscopically it was possible to demonstrate beyond any doubt the development of an atrophy of the optic nerve that is exactly identical with the variety showing the formation of the so-called Schnabel's cavernous spaces in glaucomatous eyes.

(3) Apart from this condition in the optic nerve, the cases without exception showed, both clinically and microscopically, an entire absence of the changes characteristic of glaucoma.

(4) The authors therefore feel justified in concluding that the view which Elschnig and his school hold on the formation of cavernous spaces in the optic nerve no longer holds good for all cases, as such formation may occur in eyes that are certainly not glaucomatous.

(5) The development of such spaces in cases of orbital tumour is, in their opinion, most probably due to the fact that the fibres of the optic nerve are torn away at their weakest spot in consequence of the excessive stretching to which they are subjected by the intense proptosis.

THOS. SNOWBALL.

(2) Cattaneo considers the three varieties of tuberculosis of the choroid; miliary, conglomerate, and disseminated tuberculous choroiditis.

Miliary tuberculosis. The author made histological examinations of the eyes in fifteen cases of general tuberculosis. Where there was obvious miliary tuberculosis of the choroid he found typical giant-cell systems and caseation, and was able to demonstrate the tubercle bacillus in the areas of caseation and in the giant cells, but not among the lymphocytes. He examined the eyes in nine cases of general tuberculosis in which there were no ophthalmoscopic changes. In all he found microscopic changes, either accumulations of leucocytes and lymphocytes in vessels, or small foci of lymphocyte infiltration around vessels or in the choroidal stroma.

Conglomerate tuberculosis is due to the presence of tubercle bacilli in the lesions, and the lesion produced is a tuberculous granuloma. The author states that he can usually demonstrate the tubercle bacillus in the lesions, and he regards this condition as a local tuberculosis occurring in a susceptible or already infected subject.

Writing of disseminated tuberculous choroiditis, he refers to the difficulty of diagnosing it from syphilitic choroiditis. To arrive at firm conclusions as to the characteristics of the condition two methods may be employed, to search in every possible way for tuberculous infection in patients with disseminated choroiditis, and to examine large numbers of patients known to be tuberculous for choroidal changes. A fairly constant feature is the lack or scarcity of pigment in the lesions, and the author quotes with approval the aphorism of Lagrange that "in the fundus oculi syphilis produces pigment and tuberculosis destroys it." In the early stages the lesions are irregular, of varying size, and of the colour of chamois leather, without a trace of pigment. In later stages there are extensive diffuse areas of atrophy of a greyish colour. Sometimes the condition resembles retinitis proliferans. A feature which distinguishes this form of tuberculous choroiditis is the early involvement of the retina, which in the miliary and conglomerate forms long resists invasion.

Histological examination of eyes with tuberculous disseminated choroiditis has very rarely been made. In the case of a young man who died of chronic pulmonary tuberculosis the author found in an eye a developing choroidal lesion involving the retina, and
noted complete absence of giant cells, and no characteristic arrangement of epithelioid cells. He concludes that this form of choroiditis is due not to invasion of the eye by bacilli, but to toxins from a distant tuberculous focus.

The author has made many experiments on rabbits, injecting into the carotid artery and into the eye tubercle bacilli, living and dead, whole tubercle vaccines, endotoxins and exotoxins. Some of the animals were first infected by the injection of living tubercle bacilli into the blood stream. On subsequent injection of bacilli or toxins into the eye, it was found that, whereas in healthy animals the uveal lesions were limited to the point of inoculation, in infected animals the lesions were more extensive and generalized. Typical tuberculous granulomata were produced only by whole bacilli, living or dead; toxins injected into the eye only produced disseminated choroiditis, without giant cells, and this whether the animals had tuberculous lesions in other parts of the body or not.

ARTHUR D. GRIFFITH.


(3) The importance of all problems connected with ultra-microscopic viruses has prompted Findlay and Ludford to review in pictographic form the voluminous literature already existing on the intracellular inclusions associated with certain diseases due to ultra-microscopic viruses.

On their discovery the cell inclusions were regarded by many investigators as protozoa with elaborate life cycles. This view has now been discarded, though many still believe in the compromise suggested by von Prowazek, according to which the inclusion bodies are of a dual nature, consisting of micro-organisms embedded in material deposited round them as the result of a reaction of the cell protoplasm. The term “Chlamydozoa”—literally cloak animals—was proposed as a name for this class of organism.

In trachoma the cytoplasmic inclusions found in the epithelial cells of the conjunctiva were first described by Halberstadt and von Prowazek in 1907. When stained by Giemsa’s method they are seen as small round or ovoid granules of a reddish-violet colour, sometimes surrounded by a clear halo—the initial bodies. Later, as the number of these corpuscles increases, they become surrounded by a blue staining substance which has been named plastin. Solovief in 1921 described small, round, or oval blue-staining masses in certain of the epithelial cells of the conjunctiva; these little corpuscles, which are often vacuolated, are not specific
for trachoma. Often immediately external to them there is to be found a single red-staining granule. According to this observer trachoma bodies represent the products of nuclear degeneration.

The significance of von Prowazek's bodies has been further complicated by the fact that they have been frequently found in non-gonorrhoeal conjunctivitis of the new-born. It is, therefore, doubtful whether in the present state of our knowledge the term "Chlamydozoa" can be justified as a cloak for anything except our ignorance.

A. F. MacCallan.

(4) Maghy, Charles.—Blood staining of the cornea. California and Western Medicine, May, 1926.

(4) Maghy reports three cases of this condition with the pathological findings as an addition to the four cases previously published from the Moorfields laboratory in the American Journal of Ophthalmology for September, 1919. The three cases were subsequent to injury, in one a contusion, in the others perforating wounds. In each case the clinical signs were typical and could be watched for some months after injury before the eye was excised for pain. On section the typical refractile bodies were seen in the interlamellar spaces of each cornea. In discussing the severe cases comment is made on the infrequency of the condition following severe eye wounds, viz., 1 in 400 as an average figure. At the same time no clear reason can be found for this.

The author mentions the varying opinions of ophthalmologists as to the nature and mode of deposition of the refractile bodies in the cornea. He himself considers them to be pigment granules transformed from haemoglobin and thinks that they reach the cornea both by diffusion through Descemet's membrane and through the spaces of Fontana; the circulation at the limbus probably draining away from the more peripheral parts of the cornea any degenerated blood cells or refractile bodies, thus leaving their deposition to the central zone.

R. C. Davenport.


(5) This article is a thesis by Dr. Bridgett presented for the Degree of Doctor of Medical Science in the University of Pennsylvania. It is based upon the examination of the optic nerves in 200 consecutive necropsies at the Philadelphia and University Hospitals. After a description of the normal histology of the central vessels in which the author emphasizes the difficulty of defining an exact boundary between physiological and pathological
appearances in them, particularly in the subendothelial layer, he gives the following table:

### Histologic Appearance of Central Artery of the Retina.

<table>
<thead>
<tr>
<th>Condition of Artery</th>
<th>Number of Cases</th>
<th>Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>...</td>
<td>91</td>
</tr>
<tr>
<td>Excessive &quot;physiologic&quot;</td>
<td>...</td>
<td>43</td>
</tr>
<tr>
<td>thickening of intima</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arterio-sclerosis</td>
<td>...</td>
<td>52</td>
</tr>
<tr>
<td>Syphilitic arteritis</td>
<td>...</td>
<td>3</td>
</tr>
<tr>
<td>Thrombosis</td>
<td>...</td>
<td>1</td>
</tr>
<tr>
<td>Periarteritis</td>
<td>...</td>
<td>10</td>
</tr>
</tbody>
</table>

Excessive "physiologic" thickening of the intima is explained as a condition in which the subendothelial development of fibro-elastic tissue seemed somewhat excessive, the internal elastica was split into several layers but no degenerative changes of any kind were seen. The author states: "It is a matter of opinion whether this condition should be regarded as normal or as a mild form of sclerosis. In the cases which were definitely arterio-sclerotic the changes were mainly in the intima and consisted of fibrous proliferation of the subendothelial tissue, excessive overgrowth of the elastic fibrils and various retrograde processes affecting one or both of these structures. Of the latter hyaline degeneration and atheroma were frequent, and in two cases calcareous deposition was found. In the single case of thrombosis re-canalization had taken place; the artery was markedly sclerotic and, since there was no obliterator proliferation of the intima, the condition appeared to be due to arterio-sclerosis.

The periarteritis was of the type leading to fibrosis in the adventitial sheath and in the periarterial stroma. Five of these cases suffered with a definite infection (syphilis, endocarditis, and ulcerating carcinoma of the orbit).

The author next analyses the figures to show the irregular distribution of arterio-sclerosis in different vessels and in different parts of the same vessel. Sclerosis of the aorta or coronary arteries and of the cerebral arteries occurred in about the same percentage of cases, but in only 30 per cent. of these were the central arteries likewise involved.

In twenty-two instances the central artery of one side was diseased and that of the other side was normal.

Sclerotic lesions occurred slightly more than twice as frequently in the extraneural part of the central artery as in the intraneural
DISEASE OF LENS

part. The author offers as an explanation of this interesting fact the double angulation of the artery as it enters the optic nerve, which he thinks may prevent any sudden changes of intravascular pressure. If this theory is correct then an important protective mechanism has been elaborated in the central artery guarding the retinal circulation. An important section of the paper concerns the relation between ophthalmoscopic appearances during life and the post-mortem findings. In twenty-seven cases out of 200 (a somewhat low proportion) careful ophthalmoscopic examination had been made. In seventeen the retinal vessels were regarded as normal. On histological examination of the central artery, however, only seven were found to be normal; five were definitely sclerosed; four showed an excessive "physiologic" thickening of the intima; and one perivascular small round-celled infiltration. Of the ten cases regarded as sclerotic, on microscopic examination four were found sclerosed; three showed excessive "physiologic" thickening; two periarteritis; and one was normal.

As regards the aetiological factors, in the younger patients, i.e., fifteen between the ages of 19 and 42 years in whom sclerosis of the central arteries was found; seven were definitely syphilitic; five more were probably syphilitic; and three died from chronic infections.

In all age groups except those over 80 the cases with normal predominated over those with sclerosed central arteries.

MAURICE WHITING.

III.—DISEASE OF LENS

(1) van Lint (Brussels).—Lateral intra-capsular extraction of cataract. (Extraction latérale intra-capsulaire de la cataracte.) Arch. d'Ophth., October, 1926.

(1) van Lint holds that intra-capsular extraction is the ideal operation for senile cataract. He recognizes that the two chief methods employed, that of Smith by pressure, and that of Barraquer by suction, have not been adopted generally, although the success of both procedures in the hands of their inventors has been established. "Almost all oculists who have practised these methods have abandoned them, discouraged by numerous failures. Now a surgical technique is not commendable unless the large majority of operators can carry it out with success. . . ."

In this article the author describes in detail and illustrates with seven drawings a modified method based on Barraquer's operation,
which he believes obviates the difficulties and most of the risks of
that procedure. It consists essentially in extracting the cataract
by means of the erisophake through an incision on the temporal
side of the cornea. The steps of the operation can be most usefully
studied in van Lint’s paper where the different stages are easily
followed by the aid of the illustrations. The author maintains,
apparently justifiably, that lateral extraction is superior to upward
extraction for these among other reasons:

The application of the sucker through the lateral incision is
infinitely easier than through an incision above. The globe is
more accessible, the obstruction of the upper orbital margin is
avoided: the rotation of the lens is more readily executed from
the lateral position than from above. The wound is very accessible,
no rotation of the eyeball being necessary as is the case in an
upward section. Those interested will be well advised to study
van Lint’s paper in the French journal.

J. B. Lawford.

(2) Daljang Singh Khana (Jaipur).—Extraction of lens entire
in capsule without iridectomy. Practitioner, May, 1927.

(2) After performing intra-capsular cataract extraction without
iridectomy Daljang Singh Khana “advises the patient to sit up
and not to lie down for six hours, to provide against the chances
of prolapse of the iris for the following simple reason. In the
position of lying on the back the aqueous collects inside the
anterior chamber and makes the iris float upwards, and as the wall
is weak at the incision, the internal pressure all round the iris
tends to bulge it out at the base into the incision and thus favours
prolapse. In the sitting position the aqueous fills the anterior
chamber from below upwards; thus there is fluid on both sides of the iris which hangs
like a vertical curtain and any more accumulation, instead of
pushing the iris out from behind, finds a natural, easy passage,
on the lines of least resistance, into the incision without disturbing
the iris.”

A. F. MacCallan.

(3) Löwenstein, A. (Prague).—A new view of the origin of
senile cataract. (Eine neue Anschauung über die Entstehung

(3) In expounding his views on the origin of cataract
Löwenstein first points out that the normal aqueous contains
substances, probably electrolytes, which when they come in contact
with the lens fibres render them opaque; in other words, there must
be an intervening colloidal membrane—the lens capsule with its epithelial layer—between the two, if the lens fibres are to retain their transparency. The result of a breach in the complete continuity of this membrane through physical changes is most readily exemplified by “traumatic cataract,” following gross injury to the lens capsule. In glassblowers' cataract too it has been shown that detachment of the zonular layer from the lens capsule occurs, since the rapidity with which crystalloids can permeate a colloidal membrane is nearly inversely proportional to its thickness, the thinning of the capsule through the separation of the zonular layer facilitates the passage of the crystalloids in the aqueous. His view on glassblowers' cataract is that the long-continued action of the great heat and brilliant light from the glass oven produces changes in the colloidal lens capsule, viz., rents, fissures, alteration in its homogeneous structure, and, it may be, rupture of the zonular layer. Owing to this alteration in structure and partial thinning the crystalloids in the aqueous can more readily permeate the capsular sac and produce the slowly progressive precipitation.

In the case of senile cataract the author remarks that the "senile" changes in colloidal membranes consist of a process of dehydration and transformation into a crystalline state, together with alteration in volume and more particularly, in tension, and microscopic changes in the stroma: when thus altered the membranes become more and more permeable to crystalloids. These physical changes occur in the lens capsule in common with other colloidal membranes and by facilitating the passage of salts into the capsular sac are the fundamental cause of the production of lens opacities.

Thos. Snowball.


(4) Marsh's paper opens with a review of the literature on posterior lenticonus, from which it appears that three theories have been advanced to account for the condition. These are: (1) increase in volume of the lens, possibly neoplastic; (2) hernia of the cortex through a gap in the capsule; (3) traction at the posterior pole, during foetal life, by the hyaloid vessels. The first slit-lamp examination of posterior lenticonus was made by Vogt, who found a cup-like protrusion at the posterior pole of the lens, surrounded by a brilliant ring reflection which he calls the ring reflex. This reflex is a diagnostic sign of the first importance. The senile nuclear layer was found to follow the curve of the posterior cortex, but the embryonic nucleus was normal in shape. The hyaloid
remnants were found not to be attached to the apex of the conus, but to the nasal side of it, thus disproving theory (3) above. The author's case showed a normal nucleus, with anterior and posterior Y's readily visible. At the point where the posterior pole should have been, was a fine white featherystellate opacity around which as a centre, the posterior surface was pushed backwards to form a hemisphere with a diameter of about one-fourth the equatorial diameter of the lens. The junction of the normal and the abnormal curves showed the typical ring reflex.

F. A. WILLIAMSON-NOBLE.


(5) Fradkine's article is semi-humorous, or rather it treats of a serious matter in a breezy style. It is based on a saying of Gérard's "I'm not afraid of vitreous. The visual acuity is never so good as in operations where one has had a little vitreous" (Le vitré, je ne le crains pas. L'acuité visuelle n'est jamais aussi bonne que dans les interventions ou l'on a eu un peu de vitré). The saying has appealed to Fradkine as true. As he says: "We have all, when reading a novel or at the theatre, said to ourselves, 'How true that is, I was thinking the same thing myself only the other day.'" Stranger still, the reviewer well remembers that there was at the Glasgow Eye Infirmary some thirty years ago a certain witty house surgeon who declared to the huge amusement of the juniors in his room, that so-and-so (one of the surgical staff) had said: "I like to see a little vitreous" in a cataract extraction. We treated it as a joke, but the point now is, did the surgeon after all make the remark and thus anticipate Gérard by many years? Fradkine gives a burlesque description of his feelings in a case where unexpectedly there was an escape of vitreous, and of his relief when nothing particular happened, the patient recovering with V.A. 9/10. He follows this with several other cases similar in type and concludes: "I do not try to get vitreous. That would be absurd. But I am not afraid of it as I used to be. It is beyond doubt that the visual acuity is better when the vitreous carries away with it some of the soft masses which inevitably obstruct the pupil area in the classical cataract operation. . . . The only inconvenience is the risk of infection and the duration of convalescence which seems longer than when the vitreous is not concerned in the matter."

ERNEST THOMSON.
AN EYE INJURY IN THE THIRTEENTH CENTURY

The following note is taken from the Lincolnshire Assize Roll of 1202. This roll was published by the Lincoln Record Society last year; it is edited with an introduction by Mrs. Stenton.

Wapentake de Hornicastr (Horncastle).

No. 595. Astinus de Wispinton apellant Simonem de Edlinton, quia nequiter et in pace domini Regis insultavit eum in pratis suis et ei oculum eruit ita quod maimatus est illo oculo. Et hoc offert probare etc. Simon uenit et defendit totum de verbo in verbum. Et custodes corone et comitatus testantur quod usque hoc sufficienter facta est secta apelli primoper uxorem suam postea per eum. Judicium. (Purged.) Fiat lex. et in electione appelati sit portare ferrum uel ut Astinus uenit et defendit totum de verbo in verbum. Et custodes corone et comitatus testantur quod usque huc sufficiente facta est secta apelli primoper uxorem suam postea per eum.

TRANSLATION.

Astinus de Wispinton appealed Simon de Edlinton that wickedly and in the King’s peace he assaulted him in his meadows, and thrust out his eye, so that he is maimed in that eye. And this he offers to prove, etc. Simon comes and denies the whole, word for word, and the coroners and the county bear witness that suit has hitherto been sufficiently made, at first through Astinus’s wife, and afterwards in his own person. Judgment. Let the law be made, and let it be in the choice of the appealed whether he or Astinus carry the iron. He chooses that Astinus shall carry it. Astinus has waged his law. And afterwards they both came and put themselves in mercy.

It does not seem necessary to give the names of the pledges.

Carrying the iron refers to trial by ordeal with a hot iron. It was, so far as I know, the variety of ordeal allowed to those of the yeoman class; the ordeal by water being reserved for the lower orders of society.

R.R.J.

BOOK NOTICES


This handbook is not intended to compete with the larger textbooks, but is written for the senior student and the general practitioner. The authors have wisely devoted little space to the less common affections of the eye and none at all to the rarities of

* The (i) means that the sentence in brackets has been inserted after the record was written.