GLAUCOMA

ABSTRACTS

I.—GLAUCOMA

(1) Haden, Henry C. Houston (Texas).—Some observations in regard to glaucoma simplex. Arch. of Ophth. , September, 1930.

(1) For the last few years, Haden has been measuring the intra-ocular pressure of all his patients except young children, and those with certain inflammatory conditions. The original type of Schiötz tonometer was used and some 5,000 measurements were made. These showed that increase in intra-ocular pressure can exist for a long time without any of the classical signs or symptoms of glaucoma, but that eventually these signs will appear unless remedial measures are used to bring the pressure within normal limits. The average pressure was in the region of 18 mm. Hg, i.e., well below the upper physiological limit of 25 mm. Hg given by Schiötz. There was no practical difference in the intra-ocular pressure at various ages, nor did the pressure vary with the size of the cornea, the eye or the pupil, the size and shape of the physiological cup, the state of the refraction or the blood pressure. The author concludes that routine tonometric measurement is the most reliable method of making an early diagnosis of glaucoma.

F. A. W -N.


(2) Rosengren undertook careful and extensive measurements of the depth of the anterior chamber by means of Lindstedt's apparatus in order to determine the variations with age of the depth of the anterior chamber when accommodation is relaxed, and to find whether any light is thrown on the pathogenesis of glaucoma by a study of the difference in depth of the chamber in the two eyes of an individual.

From an examination of several hundreds of cases he concludes that

(1) The depth of the anterior chamber shows very marked variations with different individuals and with advancing age.

(2) The very marked individual variations show a symmetrical
variation curve, closely corresponding to a theoretically derived curve.

(3) The diminution of the depth with age is a progressive process, though the rate of diminution is low in the more advanced years. At the age of 25, the average depth of the chamber is 3'60 mm.; at 70 it has declined to 3'15 mm.

(4) The depth of the chamber in the two eyes of the same individual is for all practical purposes, alike.

(5) On the average the anterior chamber is shallower in glaucoma than in the normal eye; but not all cases of glaucoma show a shallow chamber. The lower average is due to the fact that a group of cases of glaucoma show an exceptionally shallow chamber.

(6) The shallow chamber in glaucoma is not the result of the increased tension for it is observable in eyes before they have become glaucomatous.

(7) A shallow chamber is a predisposing cause of glaucoma.

(8) Those eyes which have shallow chambers and develop glaucoma, generally go through an acute attack, though some cases only develop glaucoma simplex.

ARNOLD SORSBY.


(3) Jahnke reports the case of a man aged 43 years, with left-sided facial naevus and absolute glaucoma of the left eye. The eye had been noted as blind at the age of 11 years, but may have been blind from birth. X-ray examination revealed a very tortuous network, of diploë veins on the same side as the facial naevus and glaucoma. Excision of the eye was unassociated with abnormal orbital haemorrhage, and microscopic section revealed a haemangioma of the choroid. Congenital abnormalities in the filtration angle were not seen. The literature on the subject is reviewed.

ARNOLD SORSBY.


(4) Weekers sees in glaucoma a disturbance in the balance which normally exists between the production and elimination of aqueous. This balance may be maintained at different levels of intra-ocular pressure, for a change in one factor is accommodated by
a corresponding change in the other. Thus increased blood volume in the uvea causes a more vigorous circulation, and hence a more vigorous elimination of aqueous. He holds that the success of the large variety of operations for glaucoma is due not to the reasons generally assigned for the different operations, but the common factor they all possess in being traumatic injuries to the eye. Experimentally all kinds of injuries produce lowered tension, the mechanism being some obscure change in the circulation of the eye—a view for which some experimental evidence is quoted from earlier work by the author. Glaucoma operations act, therefore, owing to their traumatic nature. The ideal glaucoma operation is that which inflicts the mildest possible injury and permanently lowers tension. Iris-inclusion probably satisfies these requirements best, at least in chronic glaucoma.

ARNOLD SORSBY.


(5) This paper, based upon the experience of the writers in a series of 50 cases, contains material which will prove helpful to those who employ, or who desire to employ the operation of iris-inclusion in the treatment of glaucoma. Weekers and Hubin are advocates of this operation and express the opinion that "the advantages of iris-inclusion are, on the one hand, that it is easy of execution, and on the other, that it is well tolerated by the eye. While of great efficacy it is much less mutilating than other anti-glaucoma operations."

The technique advised (and illustrated) differs from that originally described by Holth, in that a conjunctival flap is dissected from the sclera by scissors, and that the scleral incision is made (tangentially to the limbus above) by cutting movements with a cataract knife, over a length of 6 to 7 mm. If the iris does not protrude through the incision it is withdrawn by forceps, and is occasionally, but not invariably, divided meridionally. The flap is secured by two or three stitches. Holth believed that the operation was suitable only in cases of chronic glaucoma: the writers have employed it in acute, chronic and secondary forms.

The results obtained by Weekers and Hubin are given in terms of intra-ocular pressure, not in those of visual acuity.

In three tables, of acute, chronic and secondary glaucoma, numbering in all 43 cases, the tonometric measurements before and after operation are set forth. The interval between the operation and the subsequent estimation of tension varied from one to twenty-three months. These figures should be studied by those interested;
but it may be recorded that in the acute and chronic cases the results were very satisfactory; in the secondary forms, as might be expected, less so.

In the opinion of the writers iris-inclusion is the most efficient operation for reducing to a sufficient degree the tension of a highly glaucomatous eyeball. In primary glaucoma a condition of hypotony commonly results; this they believe does not constitute a danger to the future wellbeing of the eye.

J. B. Lawford.

II.—GENERAL MEDICINE


(1) Jaensch reports a case of papilloedema in which the only other ocular lesion was paresis of both superior obliques. Details of the nature of the diplopia are described, and the progress of the case given in full. The nature of the underlying intracranial lesion could not be determined, in spite of extensive investigation and exploration, until the post-mortem examination showed it to be a tumour of the pineal gland. The diagnostic significance of the bilateral paresis is discussed.

Arnold Sorsby.


(2) From physical experiments and microscopic sections Guist shows the existence of two types of vascular changes in the retina in cases of hyperpiesis, falling in line with the classification of hypertension into primary and toxic varieties. In the primary variety the blood vessels are healthy; in the toxic both veins and arteries are affected.

The essential feature in primary hyperpiesis is to be sought in cork-screw tortuosity of the smaller veins, for in the absence of any changes in the vessel walls they are the first to distend under the increased pressure, owing to their having the thinnest walls. It is only later that the larger veins also become distended and tortuous.
Narrowing of the arteries is a much later sign, and the formation of white stripes along them, later still. Arterio-venous compression is relatively early.

In toxic hyperpiesis the arteries are thin from the beginning. Owing to structural changes in the vessel wall white stripes are present early. The smaller arterioles are only visible with difficulty, and owing to the thickening of the walls of the veins, the tortuosity is not so marked as in the case of primary hypertension. White stripes along the arteries and marked arterio-venous compression are the most significant features in toxic hyperpiesis.

ARNOLD SORSBY.

III.—THERAPEUTICS


The reviewer is uncertain to what extent he is able to reproduce the spirit of Gérard's communication and equally uncertain whether the author's views represent those of British syphilographers. Gérard's style of writing is rather difficult: it may perhaps be described as elliptical, dramatic and withal somewhat humorous. If he is here correctly interpreted, he is profoundly mistrustful of the newer methods of treating syphilis. These methods may be successful, or on the other hand, may lead to the reawakening of the disease. He pins his faith to mercury and iodide and some account of his views and methods may be of interest, mainly in his own words.

"Iodide of potassium is for me" and for the older authors such as Fournier "one of the royal methods of treating syphilis in general and ocular syphilis in particular. Iodism exists, nevertheless, appearing sometimes not only as a troublesome complication which may lead to abandonment of the drug but as an event capable of causing serious accidents and of threatening life itself. How and why do these accidents occur? In what class of subjects do they appear?" (To these questions the answer is partly given in No. 4 of the following statements) "(1) I obtain success where others do not and that without changing the drugs which have been ordered. (2) Iodide, to be efficacious, must be
prescribed for a long time in considerable doses. (3) Iodide of potassium acts upon syphilitics whose general health is good. (4) It poisons doubly diseased (doublement tarés) syphilitics and especially those who are tuberculous or pretuberculous...”

While ocular syphilis is to be regarded as a tertiary manifestation, nevertheless Gérard commences with five or six intramuscular injections of grey oil. At the same time he prescribes a solution of potassium iodide, 1 gramme in 15 grammes of distilled water, to be taken as follows (with due regard to sex, weight and general condition) by adults: “First day, one dessert spoonful (for a female) to one tablespoonful. Second day, two spoonsful. Third day, three spoonsful and so on up to 8 or 10 for a female and 12 or even 15 for a male. Increase up to 8 or 15 spoonsful in 8 or 15 days, increasing by one spoonful per day. Then decrease from 8 or 15 (as the case may be) to one spoonful, a reduction of one per day. Stop treatment for eight days and then begin again.” (NOTE.—The dosage which seems to allow of either dessert or soup spoons strikes one as rather elastic.—Reviewer.)

In giving this prescription to the patient Gérard also puts matters plainly to the patient, thus:—“If we are to get a cure I am obliged to apply very strong measures (traitement de cheval). This treatment must be founded on the doses of iodide given in my prescription. (The patient is also warned against a possible expression of surprise on the part of the chemist.) In all probability you will begin by disliking the iodide very much. You will curse me: with cold in the head, catarrh, cough, pimples all over you, headaches and so on. But don’t let all this annoy you. After three or four days you will be all right. Then you will have some pains in the stomach, for the most part not very bad, and a little diarrhoea. If these symptoms are really very troublesome stop using the medicine for one or two days and begin again with the dose at which you left off. Have the bottle refilled as soon as it is empty.” Gérard holds that small doses are often badly tolerated and lead to iodism lasting eight days or more. He has a few straight words to say about proprietary preparations which contain doses of iodide incapable of doing any good, for a disease which it is necessary to strike “good and hard” (vite et fort). He also points out that it is advisable to warn the patient that iodide is an expensive drug, and mentions incidentally that forty grammes of iodide will cost thirty francs. Finally (except for a passing reference to iodism in the tuberculous) Gérard says:—“I do not despise either arsenic or bismuth, but I retain all my affection for good old mercury, lusty grey oil, and for cyanide so dear to ophthalmologists, no less than for strong solution of iodide . . . which one must prescribe in doses capable of giving a real result and a true success.”

Ernest Thomson.
IV.—DEVELOPMENT


Culler and Walls found some ectopic cone nuclei in the histological examination of a clinically normal eye of a man aged 61 years. They were most numerous in the paracentral portion of the fundus, none being seen nearer to the centre of the fovea than 320 microns. The vast majority of the nuclei were wholly outside the external limiting membrane in massive peripheral cones and exhibited a striking differentiation. All but one or two of those within 1-25 mm. of the fovea possessed a clear vacuole in their distal ends, which vacuole was absent in all the ectopic nuclei further than this distance from the fovea. The author is doubtful as to the significance of the differentiation, but suggests that it indicates a "difference in density of the interbacillar fluid in and outside of the macular region." It is interesting that although ectopic cone nuclei are not rare, ectopic nuclei have never been found in association with the rods. This is because the latter are too slender, and have their nuclei too far from the membrane to allow of one passing outside it during the processes of development, whereas with the cones, if the formation of the external limiting membrane is delayed, many nuclei might, by the time it forms, have been carried beyond the "margo," so that subsequent contraction of the membrane around each cone would squeeze such a nucleus and force it wholly above or below the outer limiting membrane. The distribution of the ectopic nuclei is explained as follows. The cones at the posterior pole are the earliest to differentiate, so that if the development of the external limiting membrane were delayed, it is just these cones which might have ectopic nuclei. Differentiation of the foveal cones, however, occurs later so that even if the differentiation of the external limiting membrane were delayed, the cones would not be sufficiently large for the nuclei to become ectopic. It is significant that in the lamprey, where the limiting membrane is very thin, ectopic cone nuclei are of common occurrence.

F. A. W-N.

V.—ANATOMY

(1) Bartels, M. (Dortmund).—Are there special nerve-fibres for the consensual pupil reaction? (Gibt es besondere Pupillenfassern für die indirekte Reaktion?) Zeitschr. f. Augenheilk., Vol. LXXV, p. 22, 1931.

(1) Bartels had a case of severe retrobulbar neuritis, in which at its height vision was completely gone (No P.L.). Direct pupil
reaction was absent, but consensual reaction present. After recovery, leaving vision of 5/50, the direct reaction did not return. Bartels argues that there are distinct fibres subserving pupil reactions to light, and that these are divided into two sets, one for direct, the other for consensual reaction. He sees no evidence for direct irritability of iris musculature to light.

ARNOLD SORSBY.


(2) Gualdi noted a year ago, the case of a young man who could voluntarily produce a flow of tears; he noted that the lacrimal gland there was unusually large, and he has made a series of observations with the view of deciding the limits of variation of the gland. With this aim he examined the eyes of 466 subjects; some were attending the clinic for disease of the eyes, some were normal. Seeing that it was not possible to measure the size of the gland directly with calipers, Gualdi made models, in paraffin wax, of the various glands as they presented themselves and attaching these to a rod, he had the means of comparing the gland of a new case with those already seen. When a new size presented itself, the model was made and attached to the series. From these measurements he established the index of size and development, dividing the product of the length and breadth of the visible gland by the thickness. (It would seem to give a better idea of the total size of the gland to multiply the three factors together.) The mean dimensions were length, 4.82 mm., breadth, 3.46 mm., and thickness 2.44 mm.

He finds that the gland is generally enlarged in acute conjunctivitis and in trachoma. The gland is larger, also, in males than in females.

HAROLD GRIMSDALE.

VI.—PATHOLOGY AND BACTERIOLOGY


(1) The problem of producing local immunity is of special interest to ophthalmic surgeons, who have of necessity to work in a field which is seldom, if ever sterile. Besredka's views on local
immunity have stimulated many researches, and have added to our knowledge thereby. He regards immunity, both active and passive, as due to a substance formed by the inter-reaction of the micro-organisms and the cells which are sensitive to them. To this substance he has given the name of the anti-virus.

He holds that this body acts on these cells, and makes them to some extent less sensitive to the micro-organisms.

In all cases it is better to use an antivirus made from the micro-organisms which are causing the disease, cultivated from the patient himself; but in many diseases of the eye, it is not possible to wait while this is being done, and therefore it is often necessary to use a polyvalent antivirus which may be kept in stock.

In chronic conditions such as blepharitis, an auto-antivirus is much more effective than any other remedy; it may be used as an ointment rubbed into the edge of the lids. In chronic dacryocystitis, also, the antivirus, in solution is stated to have excellent results.

HAROLD GRIMSDALE.


(2) Woods gives, in this article, an interesting survey of the work done up to date on the lens proteins. The lens contains an auto-oxidation system which depends on the reversible action whereby two molecules of cystein (a sulphur containing amino acid), can be converted by oxidation into one molecule of cystine with loss of a molecule of water. There are two definite factors in this system (I) a dialysable constituent known as glutathione and (II) a thermostable constituent later indentified as beta cristallin. This auto-oxidation system is sensitive to changes in the hydrogen-ion concentration and ceases to function at pH. 7, but in all probability this is not a factor in the production of senile cataract, since the lens tends to become more alkaline with advancing age. It was shown in 1907 that ultra violet light would coagulate protein, but Burge in 1909 found that 30 hours exposure to these rays produced no coagulation in lens protein. If however an excess of electrolytes, notably calcium and silicon were present, cataract was produced. Burge also found that the calcium content of a normal lens was 0'08 per cent., whereas in a cataractous lens it is increased to 15 per cent. He therefore believed that an excess of calcium and the absorption of ultra-violet light were the factors responsible for production of cataract. Later work has shown that this probably occurs by destruction of glutathione.

Infra-red rays are thought to act by producing deleterious effects on the iris and ciliary processes, thus affecting the quality of the
aqueous, and the nutrition of the lens. The lens protein would appear to comprise three substances, \textit{alpha} and \textit{beta} cristallin which are pseudo-globulins, and \textit{gamma} cristallin which is an albumin. Though the lens protein is said to be species specific and not organ specific, yet with the exception of one observation by Roemer and Gebb, there has been no demonstration of immunological changes in the organism, produced by lens protein in cases of senile cataract.

F. A. W-N.

\textbf{VII. - UVEA}


The two cases which form the basis of this communication are reported as examples of the value of biomicroscopy in the detection of the earliest manifestations of sympathetic ophthalmitis, or other ocular disease with like features. Vogt, in his Atlas, has drawn attention to the points stressed by Jeandelize and Bretagne.

Full clinical notes of the cases are given: in brief they refer to two examples of sympathetic disease, one following a perforating wound by a knife, the other a sclerecto-iridectomy for chronic glaucoma. In each case the occurrence of minute deposits on the posterior surface of the cornea, and in one of them minute flocculent deposits on the pigmented border of the iris, which were quite undiscoverable by the ordinary methods of examination, were revealed by the corneal microscope, and this when the eye showed not the slightest congestion. In one case vision was normal and no complaint had been made by the patient; in the other, vision had fallen owing to choroido-retinal changes, though the anterior segment of the globe appeared unaffected.

As a result of their experience the authors enunciate the following conclusions:

1. Cases of benign and fugitive sympathetic ophthalmitis occur which cannot be detected by ordinary methods of examination. At the present time only by the aid of biomicroscopy can their existence be determined. Hence it is advisable that careful biomicroscopic examination should be made in every case of penetrating wound whether accidental or operative. It is an error to think that sympathetic
ophthalmitis can be ruled out because no sign of it can be detected on investigation by ordinary means, no matter how thoroughly this is carried out, or because there is no complaint by the patient. The slit-lamp may reveal a very slight sympathetic reaction, even after a perfectly performed aseptic operation.

2. It is certainly correct to consider the so-called "sympathetic irritation," the manifestations of which are chiefly functional, a modality of sympathetic ophthalmitis; it is, in reality, a more decided manifestation than the fugitive variety in which there may be a complete absence of subjective symptoms.

3. These "latent" forms of sympathetic ophthalmitis deserve to be searched for and treated with the same care as the more usual and classical form of the disease.

J. B. Lawford.

VIII.—PTOSIS

Bardelli, Professor Lorenzo (Firenze).—A new operation for ptosis. (Di una nuova operazione per la ptosi palpebrale).

Boll. d'Occl., April, 1929.

Bardelli describes an operation for ptosis which resembles that of Motais in making use of the elevating muscles of the globe to substitute the defective levator palpebrae, but differs from it in the manner in which this is done.

He uses local anaesthesia, instillation of drops in the conjunctival sac, subconjunctival injection for 2 cm. along the course of the superior rectus muscle, and also along the upper edge of the tarsus, and subcutaneous injection at the points, 5 mm. from the free border of the lid, at which the special needle described later will emerge.

Description of the Operation.—The upper lid is everted and the upper edge of the tarsus is transfixed by a sharp hook by means of which the upper lid is pulled strongly upwards and the upper fornix well exposed. Another sharp hook, or a stitch, transfixes conjunctiva and episcleral tissue immediately above the limbus and draws the eye down. The superior rectus muscle is exposed by an incision which is made obliquely to give better exposure. The incision in the conjunctiva is a free one and extends well into the upper fornix. The muscle is raised on a squint hook and its edges are freed for 12 mm. from its insertion.

The next step is the separation of a strip 3 mm. wide from one or both sides of the muscle. If the muscle is a strong one (11 mm. broad) a strip is separated from each side; if the muscle seems not
sufficiently strong, only from the outer side. To do this, a curved suture needle, armed with a silk thread, is taken and made to transfix the muscle near its insertion and 3 mm. from its edge. The needle is not at once passed completely through, but its sharp edge is used to separate the muscle fibres backwards for 1 cm. from the insertion. At this point the needle is brought through, and the muscle strip is ligatured 1 mm. from the highest point separated, the ends of the silk thread being left long. The muscle strip is divided just above the ligature and is turned forwards and freed to its insertion into the sclerotic, the insertion being carefully preserved. It will now be seen how the operation now described differs from that of Motais. In that operation the muscle strip is divided from its insertion and is used to give a direct muscular pull on the upper lid. In Bardelli’s operation the strip is divided from the muscle and left attached to its insertion, being used as a sling to connect the lid to the eye.

If a strip is to be taken also from the inner side of the muscle this is now done.

For the next stage of the operation Bardelli uses a special needle. This is a large curved needle, 3·5 mm. wide and 4·5 mm. long, the curve having a radius of 13 mm. It has a spear point and a very large eye. The thread on the outer muscle strip is passed through the eye of this special needle. The sharp hook is removed from the tarsus, and the lid is kept everted instead by fixation forceps which hold it by the lower margin. The special curved needle is inserted in the conjunctival wound, passed over the upper edge of
the tarsus, and then down between tarsus and orbicularis muscle to a point 5 mm. from the lid margin, where it perforates orbicularis and skin. In severe ptosis the needle may be brought out closer to the free margin of the lid. Gentle traction on the ligature draws the muscle strip out through the skin wound. The second strip is dealt with similarly.

Before fixing the muscle to the skin, the conjunctival wound is sutured. This Bardelli does in two halves, the bulbar and fornical conjunctiva being closed by separate running sutures which are not knotted. The lower ends fall on either side of the cornea, and the stitches are easily removed on the third day by pulling the free ends.

The muscle strips are fixed to the skin by silk mattress sutures, and before inserting them the strip is drawn down and the skin pushed up until the required effect is produced. Lastly a ligature is tied around the piece of muscle protruding from the skin wound, to prevent the muscle pulling free in the next day or two.

Dressing.—Bardelli draws the lower lid up to meet the upper and applies ambrine (surgical wax) and cotton.

The writer has used this method of operating for ptosis, using a needle sent to him by Professor Bardelli, and has found it simple and efficient. One has, indeed, to be careful not to produce an excessive raising of the lid. The wax dressing has not been used; a wire cage covered with gauze which is kept moistened, and instillation of castor oil, have sufficed to prevent drying of the cornea.

ARTHUR D. GRIFFITH.

IX.—MISCELLANEOUS


(1) The case of hereditary optic atrophy, here reported by Rehsteiner, came to histological examination seven years after the onset of the disease.

In the eyeballs the only changes found were advanced atrophy of the nerve fibre layer and the ganglion-cell layer of the retina.

In cross sections of the optic nerve some portions were markedly atrophic and contained few or no medullary sheaths, while in other parts the nerve fibres were normal.

In the atrophic portions there was a moderate increase of the glia fibres together with a marked atrophy of the finer connective tissue septa.

The atrophied portion of the nerve occupied the temporal side
anteriorly, but, farther back, mainly the centre, thus corresponding to the situation of the papillomacular bundle (though greater in extent than it.)

There were no signs of inflammation, but it might be argued that in this, obviously late phase of the disease all evidence of the original inflammatory infiltration might have disappeared. The fact, however, that the appearances of the septa in this case bear a close resemblance to the late stages of toxic degenerations of the optic nerve (e.g., in atoxyl poisoning) which are accepted as primary, and are in marked contrast to those of the septa in post-neuritic atrophy (where they are thickened), leads the author to the conclusion that even in the early stages of this disease inflammation was absent, and that Leber’s disease is an inherited primary degeneration of parts of the retina and optic nerve.

The similarity of the histological changes in this affection to those of toxic degenerations of the optic nerve, above mentioned, affords no proof that it is due to a toxin from some endocrine disturbance, as has been suggested.

**THOS. SNOWBALL.**


(2) Whole hearted congratulations will be accorded to Dr. Souter, not only by the ophthalmic fraternity, but also by many others among the profession and the laity for a first-class piece of antiquarian research on the connexion of William Harvey with Aberdeen. This interesting brochure is enriched by illustrations of the portrait of Harvey in the possession of the Aberdeen Medico-Chirurgical Society, the Houbraken print, taken from the portrait in Richard Mead's collection; and a photo of the page in the Burgess Roll of the City of Aberdeen, which records the entry under date of August 30, 1641. In passing a word of praise is due to those in custody of the city archives for the excellent way in which the records have been made and preserved.

Dr. Souter’s interest in Harvey and his connexion with Aberdeen dates from nearly 20 years ago, and anyone at all familiar with historical research will appreciate the amount of patient labour that has been devoted to this pamphlet.

Sir D’Arcy Power, in his life of Harvey in *The Masters of Medicine Series*, only records one notice of Harvey in the year 1641, and so this research of Dr. Souter’s helps to fill a blank in the life of our greatest English physiologist.

Harvey was admitted a free burgess of Aberdeen in company with Adrian Metcalfe, the Royal apothecary, and Alexander Midletun, sub-principal of King’s College, Aberdeen. As Charles the First spent some months in Scotland in the autumn of the year in
question, the presence of his physician and apothecary is readily explicable.

Dr. Souter inclines to the view that Harvey was in Aberdeen at this date on university business probably, as this was the year of the union of two colleges to form the Caroline University. The Royal assent to the union was given at Holyrood on November 8, 1641. The union was confirmed by the Protector in 1654, and appears to have been in force for 20 years.

The reviewer, having been brought up on the works of Sir Walter Scott, has naturally wondered whether these newly admitted burgesses happened to meet the worthy Dugald Dalgetty, of Drumthwacket, alumnus of the Marischal College, at the dinner which was held to celebrate the proceedings, but has regretfully come to the conclusion that Dalgetty must have been abroad at the time.

R. R. J.


(3) **Birch-Hirschfeld** refers to his survey of the literature on the subject of traumatic enophthalmos, published in the volume on the orbit in the Graefe-Saemish Handbuch. The condition is rare, but not so rare as is suggested by the fact that there are published records of only 164 cases; it is frequently overlooked, for being generally associated with injuries to the orbit, it is overshadowed by the other signs of trauma. The trauma is usually of a severe kind; in 26 of the reported cases, it was caused by a kick from a hoof; but though fracture of the orbit, especially of the floor, is present in most cases, there are well-authenticated cases where this association was not present. Enophthalmos may appear immediately after the accident, or be delayed for days or weeks. Regression to the normal has been observed. The sinking backwards of the globe is generally not more than 2 mm.; but 6, 13 and 20 mm. have been recorded. In a few cases, changes in the pupillary reactions have been observed.

Birch-Hirschfeld reviews the possible causes. He finds no support for the suggestion that the enophthalmos is due to a tearing off of the trochlea. Diminution of the amount of orbital fat has been found in some cases; but the normal amount of fat has been present in at least one case. Injury to the sympathetic is discounted by the absence of other signs pointing in this direction. More can be said for enlargement of the orbital cavity, caused by fracture or by excavation of the walls; such conditions are almost always found; but the author has seen a case where the orbital cavity was enlarged
in the treatment of malignant disease, without in the least affecting the position of the globe. Scarring of the retrobulbar tissue may account for some cases, as rupture of the check ligaments does for others—and both these conditions may be the consequence of an injury which also involves fracture of the orbital walls. Injury to the fifth nerve, and presence of a foreign body in the orbit, ploughing up its tissues, are also discussed.

ARNOLD SORSBY.

BOOK NOTICES


The editors are to be congratulated on the punctual appearance of the 51st volume of Transactions, which contains the papers read before the Congress in London, in April, 1931, and those of the affiliated societies.

We hope to notice the more important of these contributions in abstract form in our later numbers.

The society is in a flourishing condition, with 553 ordinary and nine honorary members. Sir George Berry and Sir Arthur Keith have been elected honorary members of the society.

In spite of the heavy expenses incurred by the Jubilee Celebrations, the financial position is sound. This reflects great credit upon the treasurer, Sir Arnold Lawson, and his able coadjutor, Mr. C. J. Anderson.

The volume compares favourably with any and all of its 50 predecessors, and maintains the high standard set by the Transactions of this society.


There are now 46 ophthalmic clinics carried on by the Government of Egypt. Of these, 22 are specially built hospitals, 14 are travelling hospitals, and 10 are ophthalmic departments of general hospitals. This information is not stated clearly in the report, but is obtainable by analysing Table XXII.

More than half a million new patients were seen during the year, the average number of attendances being about seven, although as one sixth of the new patients attend on only one occasion, the average number of attendances for treatment is considerably more for each patient than as stated above. An innovation during the last few years, is that there are two weekly holidays instead of one. It is presumed that these are on Fridays and Sundays, and are designed