MISCELLANEOUS

ABSTRACTS

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(1) Crecchio has examined the water-content of the lenses after removal of the parathyroids; he finds it considerably increased; he discusses the modern theory of electrobiology and the behaviour of exchange in the animal organism. Taking into consideration the changes in the composition of the cataractous lens, it is found that there is increase of electro-positive substances such as water, chlorine, sodium, amino-acids which are normally repelled by the lens—itself biologically positive.

On the other hand, certain electronegative bodies, potassium, glutathione are less. These changes do not seem to be due to a variation in the permeability of the lens capsule but to an alteration of the Redox-potential which brings about irreversible reactions which interfere with the “eu-colloidity” of the lens.

**Harold Grimsdale.**


(2) In an elaborate series of experiments and investigations Cohen and Davies show that in chick embryos the spread of cerebro-spinal fluid from the neural canal to the periaxial spaces is coincident with the development of the choroid plexuses, and that in rabbit, rat and guinea pig embryos, extra-cerebral spread of cerebro-spinal fluid can be induced when a hypertonic saline solution is injected into the blood stream only after the choroid plexuses are differentiated. They further found that extracts of the choroid plexus of the rabbit, dog, cow, sheep and guinea pig contain a factor which has the following properties:

1. It increases the intradermal spread of dyes to a degree commensurate with that of the spreading factor isolated from mammalian testis by a series of other observers.
2. It is species specific: the choroid plexus extract of rabbit gives in the rabbit a much wider dermal spread than the choroid plexus extracts of cow, sheep and dog; the choroid plexus extract of the dog produces its most extensive spread in the dog.

3. Stale extracts are usually less potent than fresh extracts.

4. By injecting chicken choroid plexus extract into the central canal of the nervous system they were able to anticipate the peri-axial spread of cerebro-spinal fluid. In non-injected chick embryos, the first extra-cerebral spread of fluid is seen at seven days through the anterior membranous area of the myelencephalic roof, coincident with the development of the choroid plexus in the lateral and third ventricles. In injected chick embryos there was quite a marked extra-cerebral spread at five days, that is, two days earlier than the appearance of the choroid plexus, and a slight spread was observed in four-day embryos. Cow choroid plexus and rabbit testis extracts increased the permeability of the membranous areas but slightly and at a much later stage (5½ days).

These experiments suggest that a primary function of the glandular epithelium of the choroid plexus is to elaborate a factor which renders permeable the membranous areas of the myelencephalic roof and thus initiates the extra-cerebral escape of the fluid from the central canal.

Of special significance to the ophthalmologist is their finding that extracts of the ciliary body contain a similar spreading factor, an observation which might throw light on the aetiology of glaucoma.

ARNOLD SORSBY.


(3) Duggan's paper concerns a theory which, if confirmed, will have far-reaching and beneficial effects on the treatment of uveitis. This theory is that uveitis is a manifestation of local anoxaemia due to spastic closure of the arterioles with resulting dilatation of the capillaries and increased permeability of their walls. The degree of increase in permeability determines whether plasma, white cells, or erythrocytes will pass into the surrounding tissues. The effect of histamine or histamine-like bodies may be of importance since this substance produces local anoxaemia from arteriolar contraction with subsequent necrosis of the tissues, production of more histamine, and so the establishment of a vicious circle. Its presence may also sensitize the tissues to the action of bacteria, since Findlay has shown that after subcutaneous injection of histamine, subsequent intravenous injection of bacilli resulted in their lodging almost exclusively in the regions injected with histamine. As proof of the
validity of his theory, the author gives the results of vasodilator therapy in 11 cases of iritis, iridocyclitis, and cyclitis. The usual procedure was to inject daily 0.1 gram. of sodium nitrite by the intravenous route for five or six days, followed in some cases by 15 to 30 mg. of erythrityl tetranitrate twice daily by mouth for two weeks.

The results appear to have been uniformly successful, the time required for clinical cure varying from 5—15 days, and improvement beginning to manifest itself some 2—3 days after institution of dilator therapy. A final suggestion of the author is that histaminase (a ferment which destroys histamine) may be a valuable adjunct in the treatment of these cases.

F. A. W.-N.


(4) von Sallmann's paper is an account of volumetric measurements of the vitreous, carried out with precautions to avoid destroying its fibrillar framework and anatomical configuration. Up to date, such precautions have not been taken, with the result that the vitreous, as examined by previous investigators, has shown a steady decrease of volume in all ranges of pH, and it has proved impossible to show any tendency to expansion under physiological conditions. The author has worked out a technique for removal of the vitreous without allowing the escape of its "capillary fluid," and when this was done, expansion could be demonstrated with alterations of the pH. The material used for the experiments consisted of pig's eyes and human eyes removed within 3—4 hours of death. One particularly interesting observation in the latter category concerned a patient in whom the left eye had been blind for some years from absolute glaucoma, whereas the right eye had been normal. When immersed in a solution containing $3 \times 10^{-3}$ normal potassium hydroxide, the volume of the vitreous from the normal eye increased by 52 per cent., and then gradually decreased, till at the end of 96 hours it had lost 79 per cent. of its original size. The vitreous from the glaucomatous eye on the other hand increased by only 34 per cent. and at the end of 96 hours was still 13 per cent. larger than it had been originally. Highly liquefied vitreous shows much diminished expansion or no expansion at all on alteration of its pH. In spite of his results the author is of opinion that "the experiments in vitro did not give any indication of a possible correlation between changes of pH within physiological limits and increased tension of the eyeball."

F. A. W.-N.

(5) Inclusion conjunctivitis is a virus infection in which inclusion bodies are found in the conjunctival cells. It is an aetiological entity which in the newborn appears as a severe papillary conjunctivitis and in the adult, is a follicular affection with an acute or subacute onset.

In Thygeson's experience, the conjunctiva has never returned to normal in less than three months and has required four to five months in the majority of cases. The use of the ordinary conjunctival remedies has failed to shorten the course, but with sulfanilamide much better results have been obtained, cure or marked amelioration occurring in 2—6 weeks in adults. In infants, the disease responded even more strikingly. The dose recommended in the latter was 0.1 gm. per kilogramme of body weight, daily for seven days, in adults it varied somewhat, the average being 2 gm. daily for two weeks. Microscopically, inclusion bodies could be demonstrated in all cases during the first and second days of treatment, but were either absent or much reduced in numbers by the third day and after this were absent altogether. The number of leucocytes also diminished rapidly and pathogenic organisms (e.g., staph. aureus) also seemed to disappear, but the non-pathogenic conjunctival flora were unaffected. Only three viruses, those of trachoma, lympho-granuloma verum, and inclusion blennorrhoea have responded to sulfanilamide and it is perhaps significant that these viruses form basophilic heterogeneous inclusions rather than acidophilic homogeneous inclusions, that they show a sequence of marked variations in size and that their elementary bodies stain rapidly with Giemsa without the mordant required by other forms of virus.

F. A. W-N.

(6) Dandy, Walter E. (Baltimore).—Results following the transcranial operative attack on orbital tumours. *Arch. of Ophthal.*, February, 1941.

(6) In this paper Dandy makes out a strong case for removing orbital tumours via the cranial route. The most important argument in favour of this procedure is that out of his series of 31 intraorbital tumours no fewer than 83 per cent. proved to be associated with an intracranial growth. Had these been attacked by the orbital route, subsequent intracranial procedures would have been rendered dangerous, owing to the possibility of septic invasion from the orbit. Even in cases where the tumour proves to be confined to the orbit, the author claims that the transcranial approach gives better exposure than is afforded by any other method. The technique of the operation is the same as that employed for chiasmal growths,
the roof of the orbit being removed after evacuation of the cisterna chiasmatis—retraction of the frontal lobe then provides sufficient room for careful and deliberate removal of the orbital tumour. Any associated intracranial growth is of course dealt with at the same time. In a subsequent discussion, Arnold Knapp, on the basis of his large and successful experience of these cases, pronounced in favour of the orbital approach on the grounds of its greater simplicity except where the growth is one of the optic nerve. William Benedict was also of much the same opinion but included among the cases requiring a transcranial approach, thrombosed vascular tumours and those involving the bony well. In his reply the author emphasised the fact that one could not know, before operation, that there was no intracranial extension.

F. A. W-N.


(7) Hausman comments that cases manifesting syphilitic chiasmal arachnoiditis have hitherto been diagnosed as tabetic optic atrophy. He emphasises the point that adhesions may exist at the base of the brain in cases of syphilitic primary optic atrophy with or without signs of tabes dorsalis in the spinal cord.

Signs of diagnostic value for syphilitic chiasmal arachnoiditis are associated heteronymous visual field defects, multiple cranial nerve lesions adjacent to the optic nerve. Early and frequent visual field studies are helpful.

The author claims that even severe optic atrophy is no contraindication to surgical intervention. His series of three cases is too small for conclusions to be drawn. There was no mortality. In one case followed up for over two years, the visual acuity improved within seven weeks after operation and there was also slight visual field recovery. Anti-syphilitic treatment was then started. It is difficult to assess how much of the subsequent improvement was due to the medication and how much to the operation. It is unfortunate that the visual fields taken two years after operation were not recorded with the same size targets and similar range (2m.) as previous records taken before and 13 days after operation. In the second case there was no improvement with anti-syphilitic treatment but improvement after operation and also in the third case some measure of visual recovery occurred immediately after operation and before anti-syphilitic treatment was begun on the 17th day.

The rate and degree of visual improvement depended on the duration of the blindness. In Case I the vision was lost in both eyes for two years and the improvement most marked in the second case. This was less so as the defect had been present in one eye for 11 years and in the other 5.

H. B. STALLARD.