ABSTRACTS

I—VOLUNTARY CONTROL OF FUSION FACULTY


The interesting case reported by Barrett may well be given in the author's own words:

A.B., aged 28, was referred to me for ophthalmic examination. He was under observation for some mental disturbance with a suspicion of incipient general paralysis. The fundus and media were normal, and the following was the error of refraction:

Right eye ... ... ... ... cyl. + 0.5 90° = 6/4
Under mydriatic
Left eye ... ... ... ... cyl. + 0.5 130° = 6/4

He had binocular vision. He possessed, however, the remarkable faculty of being able to dissociate the two eyes and to cause diplopia by moving either eye outwards, either separately or together. When he fixed with one eye and diverged the other, the deviation was about 20°.

He could not effect any vertical dissociation. He could fix with either the right eye or the left eye and move the non-fixing eye out 20°, or he could turn both eyes out at the same time each about 20°. He stated that he had been able to do this all his life, and that it was just the same thing to him as moving the hand. He possessed great powers of convergence and could converge to a point approximately five centimetres from the ocular base line. With the tropometer the excursion of the two eyes was as follows:

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<tr>
<td>Right eye</td>
<td>25°</td>
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<tr>
<td>Left eye</td>
<td>25°</td>
<td>35 = 40°</td>
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This is the only case that I have ever seen in which an individual had voluntary control over the eye movements, to the extent of being able to break the fusion faculty whenever he desired. There probably have been other instances, but I have been unable to lay my hand on an account of them. It is noteworthy that the fusion can only be broken by the action of the external rectus.
II—EXAMINATION OF ALBINO EYEBALL


When Usher took up the study of albinism in association with Karl Pearson and Nettleship some ten years ago, there was no recorded case of the microscopical examination of a human albino eyeball. Without such an examination it was impossible to say whether there was complete congenital absence of pigment or not, nor could the presence or absence of a fovea and of yellow colour at the macula be determined with any certainty. A further question of importance is that of the development of pigmentation in the foetus in connection with the theory propounded by Meckel and Mansfeld that the source of albinism is to be sought in an arrest of development. In the present paper Usher describes the eye of a human albino girl of 17 who died from meningitis complicated with epilepsy and mitral incompetence. Seven years previously she had attended the ophthalmic department, and, after the correction of a considerable amount of mixed astigmatism, had vision of 6/36 in each eye. A report of this case was published by Souter in "Albinism in Man," Pt. IV, No. 646.

Careful serial sections were cut horizontally, no sections being lost. In none of them could a fovea be made out, but the retina, as in normal eyes, had several layers of ganglion cells at the macula. The macula had a yellow colour when the eye was opened. The pigmentation of the retinal epithelium resembled that in a normal eye, but was less in quantity. Mesoblastic pigmentation was entirely absent in the iris, ciliary body, and most of the choroid, only a few cells in the macular region containing any pigment. Usher points out that the defective vision and nystagmus found in albinos is probably mainly due to the absence of a fovea, and not, as has been suggested, to defective retinal pigmentation. In the second part of the paper there is an account of the condition of the ocular pigmentation in some dark-raced foetuses. Usher sums up as follows:

"(a) Of the six albino eyeballs thus far examined, the albinos being determined clinically by the usual clinical characters, four are found to have pigment, of a fifth no statement was made by the examiner as to pigment. The sixth case was that of an infant, and here no trace of pigment was found in any of the structures of the eye. The remaining examinations of the human albino eye are concerned only with portions of the iris; in one no pigment, in the other some pigment was observed. The former case provides no evidence as to
whether the whole eyeball was or was not without pigment. We must conclude therefore that the total absence of pigment in the eye cannot be used as a definition of human albinism.

(b) As apart from absence of pigment, the absence or imperfect development of the *fovea centralis* shown to occur in albinotic eyes may possibly be the chief cause of defective vision in these cases.

(c) An examination has been made of the distribution of pigment in the eyes of a number of dark-raced individuals, adult, infant and foetal. The notes made indicate that in the dark-raced eye mesoblastic pigment appears earlier in foetal life, especially in the choroid, and is in much larger quantity by the time of birth than in the European eye.

According to this we should expect, if albinism consists of 'an arrest of development,' more pigment in albinos of dark races than in albinos of white races. Clinical examination of such albinos appears to indicate that this is a fact, but it is a fact which might be accounted for on other than the Meckel-Mansfeld hypothesis. At the same time it renders any definition of human albinism as a complete absence of ocular pigment less valid for any practical service in the study of the heredity of albinism."

Two coloured plates and an excellent bibliography accompany the paper.

Usher has made an important contribution to the study of both heredity and albinism, and one which all interested in either subject cannot afford to miss.

E. E. H.

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**III—SUPERNUMERARY TEETH IN ORBIT**

de Lapersonne, Velter and Prêlat (Paris)—Supernumerary teeth developing in the orbit. (Dents surnuméraires développées dans l'orbite). *Arch. d'Ophtal.*, March, 1921.

The case now recorded is believed by the authors to be unique; they have failed to find a similar example in their search through medical literature.

The patient, a well-grown healthy girl, aged 15, first came under observation in August, 1920, at the Hôtel Dieu, by reason of right-sided exophthalmos, and defect of vision dating from early childhood.

The right eye was slightly proptosed, and showed a high degree of deviation upwards and inwards, with complete loss of movement downwards and outwards. There was oscillatory nystagmus,
aggravated in attempts to look down. Refraction hypermetropic, vision with +2·D.Sph.=0·3. Media clear, fundus normal, pupillary reactions normal.

The left eye was in a normal position, its refraction and vision were similar to that of the right eye, and it also exhibited nystagmus.

The exophthalmos was not reducible nor pulsatile. There was slight facial asymmetry, the right superior maxilla being a little more prominent. No abnormality of the orbit could be detected by palpation. Rhinoscopy and diaphanoscopy failed to detect disease of the peri-orbital sinuses.

Radiography alone led to the diagnosis of the cause of the exophthalmos and the paralysis of ocular movements; the extraordinary conditions thus discovered are illustrated by two diagrams prepared from radiographs. One, in profile, shows the posterior part of the right upper dental arch with the molars developing normally; above this is seen a group of supernumerary teeth, in varying stages of development, some with one, some with two roots. They lie in different directions, vertical, horizontal, and oblique, and appear to be in the maxillary tuberosity. When they reach the floor of the orbit, they form an opaque mass in which it is difficult to distinguish the individual teeth.

Examination of the antero-posterior radiograph shows that the teeth in the orbit are larger and appear to be more highly developed. They occupy the deep part of the orbit, and some of the plates seem to show that they have traversed the posterior part of the sphen-maxillary fissure. This development explains the exophthalmos and the interference with the action of the inferior and external recti muscles.

The authors feel doubtful as to the exact number of supernumerary teeth in the maxilla and the orbit; their approximate estimate is twelve, but they recognise the possibility of a larger number of dental germs in the group, especially in the orbital portion and draw attention to the importance of this in relation to the ultimate development of the malformation.

The question of treatment has been carefully considered. The teeth in the maxillary tuberosity are well tolerated, cause no inconvenience and do not call for interference. The orbital group, causing exophthalmos and displacement of the globe upwards presents a much more difficult problem. The decision reached is that surgical intervention ought to be postponed. The patient will be kept under observation in order that any extension of the orbital lesions, or any implication of the optic nerve may be detected.

J. B. LAWFORD.