Short Notes and Clinical Cases.

THE OCULO-AURAL MOVEMENT.

By MARK GERSTLE, JR., SAN FRANCISCO, AND
PAUL WILKINSON, LONDON.

INTRODUCTION.

IN 1908 Kinnier Wilson¹ reported his observations on a series of 50 individuals with reference to an associated movement of the eyes and ears. When the eyes were voluntarily moved laterally an associated curling backwards was observed in either or both pinnae. He found this phenomenon present in 40 per cent. of his series, and also noticed that upon conjugate deviation he obtained an ipsilateral movement of the ear more often than a contralateral.

In 1909, H. S. Stannus² continued these observations upon one hundred males of the Bantu tribe in Nyasaland, his suggestion being that the more primitive races might be expected to show these movements more frequently than Europeans. He tested one hundred males and found that 66 per cent. showed movements of one or other pinna. However, this observer noted the greater incidence of contralateral movement, as opposed to Wilson's original findings.

Carmichael and Critchley³ in 1924 further investigated this matter by examining 400 cases. They also described several other facial associated movements. They agreed with Stannus in finding that the contralateral movement was commoner, and furthermore noted that the phenomenon was more readily elicited in males than in females.

In 1928 R. M. Brickner⁴ examined a series of 200 cases. He found the movement present in from 70 to 80 per cent. of the subjects—a higher incidence than that noted by any previous observer. He also found the contralateral movement much commoner than the ipsilateral. Believing that this movement might be mediated through the corpus striatum and the substantia nigra, he examined a number of cases of paralysis agitans, finding it, however, to be present in all these cases. He suggested that the phenomenon might be useful in estimating the functional capacity of the facial nerve, inasmuch as all observers agree that this movement is executed by a contraction of the transversus auriculæ muscle which is supplied by twigs from the seventh nerve. He found, in support of this idea, that there was no movement on the affected side in the presence of marked facial weakness; furthermore, that there was a striking diminution in the range of movement even in the presence of mild facial paresis.

PERSONAL STUDIES.

Our findings are based on a series of one hundred cases comprising fifty males and fifty females, chosen more or less at random from the wards of the National Hospital, Queen Square, London.

The first important point which emerges from our observations is the almost invariable presence of the phenomenon. It was noted in 98 per cent. of our cases. This increased percentage we attribute largely to the method of observation adopted. It was found much easier to detect slight movements of the pinnæ if one observer were facing the patient and directing the conjugate deviation of the eyes, while the other watched the ears from behind.

The second point was the greater amplitude of the movement in males.

The actual results obtained are embodied in the accompanying Table (figures expressed in percentages).

	50 Males.	50 Females.
Movement of pinnæ observed	98	98
Strong movements	74	9
Weak movements	24	89
Contralateral movements stronger than ipsilateral	64	42
Ipsilateral movements stronger than contralateral	6	24
Mixed movements	30	30

It became obvious as the investigation proceeded that the contralateral movement of the pinna was seen more often than any other single type of response and was more frequently noted in males than in females. Indeed, an analysis of our figures shows that in 64 per cent. of the males contralateral movement was greater than ipsilateral, whereas in only 6 per cent. of the males was the ipsilateral movement, greater. In females, on the other hand, only 42 per cent. showed a greater contralateral movement, while the ipsilateral movement predominated in 24 per cent. of the cases.

A certain percentage of the cases showed what we designate a mixed movement; by this we mean that on conjugate deviation to the right the left pinna showed the greater excursion, whereas on conjugate deviation to the left the left pinna also moved more—in other words, a contralateral response to one side and an ipsilateral one to the other.

In only two cases in the series of 100 could no movement of either pinna be detected; and in one of these subjects the mental status precluded co-operation.

In the one case of Bell's palsy examined we were able to confirm Brickner's observation that the movement is lost on the affected side. However, we were quite unable to verify his finding that the movement was diminished in unilateral facial paresis resulting from supranuclear lesions.

We also found no impairment of the movement in cases of Parkinsonism and Sydenham's chorea which we examined, supporting the view that the corpus striatum and substantia nigra play no essential rôle in the mechanism.

We think it of importance to report that in the two cases of cerebellar neoplasm examined there was no movement of the ear on the side of the tumour.

In conclusion we would like to suggest that this movement be spoken of as the oculo-aural phenomenon of Wilson since it was first described by him in 1908.

SUMMARY.

(1) 100 cases—50 males and 50 females—were examined to study the oculo-aural phenomenon of Wilson.

(2) Some movement of the pinnæ was found in 98 per cent. of all cases examined.

(3) The movement was much greater in amplitude in males than in females.

(4) Contralateral movement was the one most commonly observed in both sexes.

(5) Ipsilateral movement, which was stronger than contralateral, was four times commoner in females than in males.

(6) Mixed reactions were obtained in equal number in both sexes and comprised approximately one-third of the series.

(7) In peripheral facial palsy no movement was noted on the affected side.

(8) In two cases of cerebellar neoplasm no movement of the ear on the side of the tumour was observed.

REFERENCES.

- ¹ KINNIER WILSON, *Rev. of Neur. and Psychiat.*, 1908, vi, 331.
- ² STANNUS, *Rev. of Neur. and Psychiat.*, 1909, vii, 770.
- ³ CARMICHAEL AND CRITCHLEY, *Jour. of Neur. and Psychopath.*, 1924, v, 124.
- ⁴ BRICKNER, *Arch. of Neur. and Psychiat.*, 1928, xix, 104.