PERSEVERATION IN THE INSANE EPILEPTIC.

By JOHN H. EWEN, M.R.C.S.Eng., L.R.C.P.Lond., D.P.M.,
Assistant Medical Officer, Surrey County Mental Hospital, Netherne.

ONE of the main difficulties encountered in the study of psychology is the lack of exact definition in its terms. In psychopathology this difficulty is intensified and many authorities use the same term with widely varied meanings. This is especially noticeable with the term "perseveration." Some writers restrict its use to describing a subsidiary symptom of apraxia or agnosia, and limit its application to the repetition of an already executed movement in the presence of desire to make a fresh movement. Others write of agnostic perseveration as being synonymous with ideational inertia, and define it as the persistence of an idea in the process of recognition. Woodworth (1) defines perseveration as recall seeming to occur without a stimulus, and considers that some undetected external stimulus is necessary. Dumville (2) holds that perseveration is much the same as retentiveness, and limits its meaning to spontaneous revival in the case only of intense experiences, tracing a close connection between perseveration and association.

Spearman (3) suggests that the perseveration factor, "P," may measure the degree of inertia in mental energy in the same way as the factor "G" (general ability) may measure the quantity of mental energy, approximating to a measure of intelligence. The basis of perseveration lies in the fact that a residuum of excitement remains after stimulation. The measurement of the residual excitement may give an indication of the amount of inertia present. Spearman's law of inertia is concerned with cognitive processes, and in the following tests an attempt has been made to investigate experimentally the motor, sensory and ideational features of perseveration in insane epileptics. The general scheme of the tests follows that elaborated by Wynn Jones, to whose paper (4) the writer is much indebted. Over 200 separate tests were carried out, and in every test a control was done under identical conditions with normal subjects. All the patients tested suffered from frequent attacks of *grand mal* associated with certifiable psychoses.

https://doi.org/10.1192/bjp.76.314.537 Published online by Cambridge University Press

Sensory Tests.

(1) *The rotating coloured discs.*—Two discs were used, one being red/green, the other blue/yellow. Each subject was tested independently with both. The disc was rotated by an electric motor started at a high speed, which was gradually reduced until the subject could clearly distinguish the two colours, the rate of revolutions at this point being read from a revolution-counter. The table shows the average speed at which the two colours were detected.

Revolutions per minute:

	Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
Red/green	649	541	431
Blue/yellow	732	548	512

(2) *Visual adaptation.* Each subject was placed at a distance of one metre in front of a glass screen illuminated from behind by a high-powered electric bulb. The screen was regarded steadily for two minutes, the rest of the room being in darkness. The light was then extinguished, and the only illumination present was a faint glow obtained from a dry-cell battery and bulb which was projected on to a definite portion of the screen. As soon as the subject detected the glow he was instructed to place his finger on the light spot on the screen. The time taken between the extinguishing of the bright light and the detection of the dull glow was noted by means of a stop-watch. The average time taken by each group is given below:

Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
65·5 secs.	123·5 secs.	99 secs.

Motor Test.

The motor test used was that elaborated by Wynn Jones, called the reverse stroke test. Other motor tests can of course be used, and should supplement this test in a more comprehensive investigation.

The reverse stroke test consists of two parts:

A. The subject is told to write the figures 2, 3, 6, 7 as quickly as possible, no attention being paid to the quality of the writing so long as it is legible. Thirty seconds is allowed for this part.

B. In the second part the subject is instructed to write the same

https://doi.org/10.1192/bjp.76.314.537 Published online by Cambridge University Press

figures, but to commence to write from the bottom of the figure instead of the top. Hence the direction of the movements used in the writing is reversed. Time allowed for this part is 2 minutes.

A measure of efficiency is given by the formula—

$$E = \frac{n_2}{4n_1},$$

where n_1 and n are the number of figures written in part A and B respectively. The following table gives the average efficiency of each group tested:

Normal. (10 subjects.)	Male epileptics. (10 cases)	Female epileptics. (10 cases.)
·343	·224	·155

Ideational Tests.

The following two fluency tests were used in place of intelligence tests, both on account of their simplicity, and because the processes of association involved are more readily tested in this way, and are not so dependent on the amount of education the subject has received. It should, however, be noted, as has been pointed out by Spearman (5), that part of what was usually attributed to perseveration consists of an inhibited flow of ideas or a loss of fluency.

The first test applied was the "animals" test. The subject was instructed to give the names of as many animals as he could in the time allowed—one minute. One mark was given for each name. The group averages for this test are as follows:

Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
22·7	12·0	11·1

The second test used was the "blots" test. The subject was asked to enumerate all the objects of which the blot reminded him. Any resemblance, fancied or otherwise, was to be given within the specified time of one minute. Two marks were allowed for each meaning. The average number of marks for each group was:

Normal. (10 subjects.)	Male epileptics. (10 cases.)	Female epileptics. (10 cases.)
16·4	7·2	6·7

Conclusions.

Consideration of these results seems to show that perseveration is a feature of the peculiar mental state of insane epileptics between

https://doi.org/10.1192/bjp.76.314.537 Published online by Cambridge University Press

attacks. The predominating factor in the associated psychosis naturally has a bearing upon the results, and in this connection it is of interest to contrast the findings obtained from similar tests applied to cases of mania and melancholia.

The results in the motor and ideational tests were better in cases of mania than in melancholia according to Wynn Jones's findings (4), while the male epileptic results were better than the female epileptic results in the colour test, the motor test and the ideational tests. While differentiation upon these lines is obviously inadequate, it is a point worthy of notice that all the male epileptics tested were prone to maniacal outbursts, while the female epileptics were more inclined towards the melancholic syndrome. Taking the results as a whole, it would appear that mental inertia as measured by perseveration is one of the peculiarities of the epileptic constitution.

My thanks are due to Dr. P. C. Coombes, Medical Superintendent of Netherne Mental Hospital, for permission to publish these notes.

References.—(1) Woodworth, *Psychology.*—(2) Dumville, *Fundamentals of Psychology.*—(3) Spearman, *The Abilities of Man.*—(4) Wynn Jones, *Journ. Ment. Sci.*, October, 1928.—(5) Spearman, Maudsley Lecture, *Journ. Ment. Sci.*, 1929, p. 357.

https://doi.org/10.1192/bjp.76.314.537 Published online by Cambridge University Press