

and do a thousand and one jobs which previously were done for him. He learns to take his own part in games, and his character is encouraged to develop on right lines.

*Mr. Broadbent writes :*

Shortage of material has resulted in the making of smaller pieces of work—black-out screens, garden implements, household repairs, etc. Every boy

now has a metal gas mask case made out of old material. Smaller classes and more time have resulted in greater progress, and hobby work has been done out of school hours. Increased physical stamina has made it possible for boys to begin handicraft lessons at 10 years of age and to work through the scheme. Amongst the older boys, I find there is quicker execution and the work is better finished.

## Electroencephalography in Relation to Behaviour Problems

One of the basal questions submitted to psychologists is "Nature or Nurture?" Are abnormalities of behaviour due to inherent factors inborn, which cannot be helped and only to a slight extent altered, or to influences of the environment operating after birth, which may be removed or at least prevented?

The influence of Lombroso and those who followed in his footsteps stressed the inherent and inevitable factors (Nature), and a pessimistic and non-possumus attitude was established for several decades. Then came modern psychology with its insistence on the influence of environment (Nurture), and there ensued a wave of optimism and a claim almost to omnipotence by the enthusiastic psychotherapist.

The wise psychologist when faced with this question will answer: "Both, but in different proportions in different cases"—so that in every subject a close study must be undertaken to determine how much of the abnormality is due to Nature and how much to Nurture.

Recent investigations with the Electroencephalograph seem to show that "Nature" may have more to say in the explanation of certain behaviour problems than the more enthusiastic new psychologists were prepared to admit, but this is not to say that there ought to be a reversion to pessimism, for all that is disclosed is that some of these problem children have a certain tendency towards abnormality which may never come to overt expression if they are carefully handled and wisely treated.

The Electroencephalograph is an instrument which records the electric waves which emanate from all living tissues—the brain amongst the others. In the case of the brain at rest, these waves are regular in rhythm with a frequency or rate of 10 per second. It is found that abnormalities, both of structure and function of the brain, show disturbances both of the rate and regularity of this

rhythm, a condition known as dysrhythmia (abnormal rhythm).

Studies of these abnormalities have in the past been directed to patients suffering from injuries to the brain, new growths within the skull, and epilepsy, but more recently increasing attention is being paid to studies of children showing abnormalities of behaviour.

Few of these studies have been published but a series of observations is being conducted in this country in relation to children in a Hostel for Difficult Children. In America some work has been done and Lindsley and Cutts (1940) have obtained some interesting results. They found that the incidence of abnormalities of rhythm was markedly higher in a group of behaviour problem children than in a control group of normal children, and conclude that "the greater incidence of abnormalities of rhythm suggests a disturbance of brain function which may be an important factor in the inability of the former group to adjust to environmental conditions, particularly if such conditions are adverse. On the same basis, one might expect that the so-called normal children whose electroencephalograms showed significant evidence of disturbances would be poorer risks in the face of persistent environmental difficulties than those whose records did not show such disturbances."

In the present state of our knowledge, too much stress should not be paid to electroencephalographic findings in this or any other abnormality of behaviour or function, but it is obvious that it is an interesting line of research which is well worth following up.

It may be that the future will reveal that these children who show marked abnormalities of rhythm do not warrant too much expenditure of time and labour in psychotherapeutic endeavour, whilst a normal picture may mean that lack of success is a serious reflection on the skill or perseverance of the

psychotherapist, provided he can secure such a control of the child's environment as to give him a chance of bettering it. On the other hand, it may mean that certain drugs may be more useful in selected cases (those with marked dysrhythmia) in modifying behaviour than seems likely to be the case at present.

R.G.G.

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These economies deprive the journal of much of the attractiveness which it hitherto possessed, but we ask our readers to accept them as a wartime necessity, and hope for their continued support.