

Some Characteristics of Educationally Subnormal Children*

By PHILLIP WILLIAMS

INTRODUCTION

Over the past twenty years there has been a rapid growth in the provision of special schools for educationally subnormal children. Between 1953 and 1962, for example, the number of pupils attending special schools for the E.S.N. rose from 19,000 to 36,000 but there were still 10,000 children awaiting admission on the latter date (Ministry of Education, 1963). The E.S.N. population is different both quantitatively and qualitatively from the mentally deficient group of children of pre-war days, yet we have surprisingly little knowledge of the general characteristics of this growing section of the child population.

This paper is concerned with an analysis of data relating to the ascertainment of a sample of children attending special schools for the E.S.N. in South Wales. It represents the first stage of a research project in special education being carried out at the Department of Education at the University College of Swansea.

The Sample Statistics

The investigation is being carried out with the co-operation of seven local education authorities in South Wales and of the eight Special Schools for the E.S.N. that these L.E.A.s provide.

The schools were first approached in the autumn of 1962, after which they were visited and a one-in-five sample of the 801 children obtained by taking every fifth child by register order. This provided the 161 children who form the N group, with which we are concerned here. While the findings of this enquiry have direct

* This article is based on a paper read to the Conference of the Association of Special Education in August, 1964.

relevance to South Wales only, it may be of interest to note the extent of the correspondence between the population of our eight schools for the E.S.N. and the population of children in all schools for the E.S.N. in England and Wales.

TABLE I

Correspondence between Children Attending Eight Special Schools for the E.S.N. in South Wales and Children Attending all Schools for the E.S.N. in England and Wales

N	Investi- gation Population	National Population*
801	36,276	
Percentage of total school population ..	0.40	0.51
Percentage of E.S.N. population in residential schools ..	16	20†
Percentage of E.S.N. population in day schools	84	77†
Percentage of boys in E.S.N. sample ..	61	60
Percentage of girls in E.S.N. sample ..	39	40

* Figures calculated from the Ministry of Education's "Statistics of Education, 1962".

† The remaining 3 per cent. of the national sample are day pupils at schools which take residential pupils.

The Information

Through the co-operation of the Directors of Education, the Principal School Medical Officers and the Educational Psychologists access was given to the data of the ascertainment

examination recorded on Form 2 HP. This necessitated considerable effort on the part of many people in order to trace the material, which we took from the last examination before entry to the special school. In all, 42 items were selected for analysis from Form 2 HP, and only those items which had been completed for over 90 per cent. of the children were used. This gave 27 items, with a mean completion rate of 98 per cent. It may be interesting in passing to note that the 15 items which were discarded, where a proportion of the examiners had not felt able to give the information required, were mainly items concerned with the child's development, asking for the age at which the child walked unaided, the age at which bladder control was obtained, etc. These are items for which the examiner may have to rely on the unsupported testimony of a mother, and which are difficult to answer in terms of a clear-cut age as the question seems to imply.

In completing Form 2 HP, as well as the school report forms which were available in nearly every case (apart from the few pre-school children in the sample), the examiners stated that they had access to at least one other report for 72 per cent. of the children, and to at least two other reports for 37 per cent.

In addition, information about the social class background of the children was required, and with the help of Miss Gruber, the project social worker, who visited a number of the homes, a record of the social class, based on the 1961 census classification of occupation, of the homes from which the children came was completed.

A. FACTUAL

Sex Ratio

The 161 children were made up of 97 boys and 64 girls. This ratio of 1.5 : 1 has already been recorded in Table I as characteristic of children in special schools for the E.S.N. in England and Wales. Nearly all workers in the field of backwardness find a preponderance of boys in their samples. Thus Burt (1950) described ratios of $1\frac{1}{2} : 1$ and $1\frac{1}{3} : 1$ respectively for his higher and lower grades of educable

defectives. Schonell (1948), in investigations into specific backwardness in a school population of over 15,000 children, found ratios varying between 1.7 : 1 and 2.3 : 1 boys : girls for specific backwardness in reading, and similar figures for backwardness in spelling. Boys also predominated in Schonell's figures for specific backwardness in written English, although the ratios here are not so marked.

More recently Lovell, Shapton and Warren (1964) found a ratio of over 2 boys to 1 girl in a group of 253 first-year junior school children with reading quotients of less than 80.

No really satisfactory explanation of this preponderance of boys has been provided. Stein and Susser (1960) suggest that factors beyond intelligence, such as social and classroom behaviour, influence the selection of boys rather than girls for ascertainment as E.S.N. Tanner (1961) has collated evidence on the skeletal immaturity of boys relative to girls of the same age group, a physiological situation which may render boys more vulnerable to damage—perhaps at birth, for example. Burt (1950), commenting on the greater incidence of speech defects in boys, speculates on whether the slightly larger heads of the males might have rendered them more susceptible to pressure and head injury at birth. But none of these suggestions explain the preponderance of boys at the other end of the educational spectrum. The spread of attainment seems to be wider in boys than girls (e.g. Vernon (1960), Wiseman (1964)), and Penrose (1963) points out that the male is found to be the more variable sex in respect of some physical characteristics as well as mental ones. This greater variability of the male sex may be one factor in this situation, for which as yet there seems to be no certain explanation. Whatever the explanation or explanations might be, genetic, cultural, physiological, etc., the situation in our group of special schools seems to be in accord with other investigations.

Age Distribution

The age distribution of the sample is given in Table II.

It is worth noting the similarity in the age distribution of the two sexes. Although there

TABLE II
Age Distribution (Per cent.)

		7 or less	8-9	10-11	12-13	14+	N
Age distribution of the sample	Boys	6	14	19	32	29	97
	Girls	6	14	17	33	30	64
	Total	6	14	18	32	29	161
Age distribution of the national population of pupils at schools for the E.S.N.*		5	14	24	29	28	
Age distribution of the sample at ascertainment	Boys	35	37	26	2	—	97
	Girls	39	28	27	6	—	64
	Total	36	34	26	4	—	161

* Calculated from "Statistics of Education, 1962".

are fewer girls, they are present in special schools in roughly the same age group distribution as boys. It is also worth noting the correspondence between the age distribution of the national population and that of this sample. Although it must be remembered that age distribution may reflect administrative policy, another interesting point here is the low proportion of younger children; only about a fifth of the children are under 10 years of age. The importance of early special education for mentally handicapped children has been stressed by Kirk (1960), for example, and the Association for Special Education (1964) made the same point in its evidence to the Plowden Committee, but in the Special Schools over half the children are over 12 years of age. However, it is important to remember that if all children entered schools for the E.S.N. at six, say, and stayed till sixteen, there would still be a greater proportion of children over ten than under ten. In other words a more helpful picture of the situation may be obtained by looking at the ages at which our sample were ascertained.

Here we find that only 30 per cent. of our children had not been ascertained until they were ten years of age or more. In the field of mental deficiency Clarke and Clarke (1958) give 10-14 years as the maximum period for prevalence and ascertainment, and Jordan

(1961) who surveys a number of investigations reaches similar conclusions, suggesting that the pressures of educational systems are the major factors making for detection. These figures would seem to suggest that in the field of educational subnormality we are now ascertaining for special schools somewhat earlier, although not perhaps as early as some experts would wish. Tansley and Gulliford (1961) refer to earlier ascertainment as one of the most urgent needs in special educational treatment.

Month of Birth

There is accumulating a body of evidence which suggests that children who are born in the summer months are handicapped educationally. This situation has been shown to exist for retarded readers (Johns, E. M., 1962), child guidance cases (Williams, P., 1959) and even for "B" stream children (Jinks, P. C., 1964). It would seem reasonable to expect that a similar effect might be found with the children of our sample, and this was indeed the case.

For *this* sample of 161 children the effect is not noticeable for the girls, but is significant for the boys, at the 0.02 level.

If we break the groups at I.Q. 70 we find that there is a trend which does not quite reach accepted levels of significance in both groups of boys, for higher incidence of summer birthdays.

TABLE III
Birthday Distribution of the Sample (Per cent.)

	Sept.-Dec.	Jan.-April	May-Aug.	N
Boys	20	35	45	97
Girls	41	28	31	64
Total	28	32	40	161

If we break the group down by social class and examine the effect within each of the social classes III, IV and V we find that the summer birthday effect is significantly associated with boys from social classes IV and V, but not social class III.

It is often suggested that the higher incidence of summer-born children found in groups of educationally backward children is linked with the term-of-entry effect. Where infant schools accept three intakes of children each year—in September, January and April—and transfer children once a year to junior schools—in September—then the summer-born child spends less time in infant school than the rest of his school age-group. Children are admitted to the infant school in the term in which they are 5 and are admitted to the junior school in the start of the school year in which they were 7+ on September 1st. The effect of this administrative arrangement (which is characteristic of the area of this investigation) on length of stay in the infant school is shown in Table IV.

But the term-of-entry effect may not be the only cause of the uneven birthday incidence obtained. Williams (1964) has shown that other factors may be at least partly responsible. Thus the performance of younger boys in an educational age-group (the summer-born) may be gradually depressed as a result of continuous competition with older, more mature boys.

There may also be factors of an entirely different kind operating. Thus Orme (1963) has recently been proposing climatic features during pregnancy as being possibly linked with intellectual development, and Stott (1963) has argued the need for closer examination of various psychological and physiological factors in the prenatal period as possible causes of backwardness. This effect could be linked with factors of *this* nature, and the main point here is the need to examine more closely any effect which is so consistently widespread among several groups of handicapped children, so that we might emerge with a clue which could be helpful to our understanding of the causes of backwardness.

B. SOCIAL

The social class of the homes of each of the 161 children was obtained, using the 5-point occupational classification of the General Register Office (1960). The distribution of social class obtained differs highly significantly from the distribution calculated for the population of the areas concerned ($p < 0.01$). Classes I, II and III are under-represented, while IV and V are over-represented. The difference between the distributions of the boys and girls is not significant. The positive association between backwardness and social factors has been demonstrated in many investigations,

TABLE IV
Effect of Birthday Month on Infant School Stay

Birthday month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Enters Infants ..	Jan.	Jan.	Jan.	Apr.	Apr.	Apr.	Apr.	Apr.	Sept.	Sept.	Sept.	Sept.
No. of terms in Infants	8	8	8	8	7	7	7	7	9	9	9	9

including Burt (1960), Kemp (1955), Fraser (1959) and Wiseman (1964). Stein and Susser (1960) have commented on the relatively high incidence of children from the lower social classes in their sample of E.S.N. children at Salford, and have suggested that this is not because there is a higher incidence of low intelligence in the lower classes, but rather that there is an increased likelihood of ascertainment in the lower classes for the same I.Q. level. There is no evidence from our sample that the I.Q. distributions within the social classes III, IV and V are different.

TABLE V
Social Class Distribution (Per cent.)

	I	II	III	IV	V	N
Boys ..	1	3	42	18	36	97
Girls ..	—	2	41	27	31	64
Total ..	—	2	42	21	34	161
S. Wales	3	13	50	17	17	

Children not Living with their Parents

In 11 of the 161 cases the children (eight boys and three girls) were not living with parents or guardian, and in four of these 11 (or 2.5 per cent. of the whole group) they were in the care of the Children's Officer. The percentage of children in care in the authorities concerned at March, 1963 was less than 1 per cent. (Home Office, 1963).

Stein and Susser (1960) have stated that a disproportionate number of children from broken homes are ascertained as E.S.N., and cite other work to support this. They suggest that this is because children from broken homes are more likely to be ascertained than those of the same intelligence level from functioning families, not because broken homes produce children with lower I.Q.s. In this sample, the 11 children not living with their parents had an I.Q. distribution which was slightly higher, but not significantly so, than the group as a whole. But different criteria for "broken homes" make fair comparison difficult.

Position in Family

Family size is a difficult variable to use, since this may alter over the years. Birth rank,

however, remains unaltered. While there is little difference between the incidence of birth ranks for boys and girls, if we look at Table VI, we see that the overall incidence of first-born children is 26 per cent. This is a significantly lower incidence of first-born children than the 37 per cent. that Douglas and Blomfield (1958) quote in their sample of 5,000 children ($p < 0.01$).

It is, of course, possible that this difference is due to the preponderance of children from lower social classes, where families tend to be large. Thus Douglas and Blomfield find the incidence of first-born children falling from 47 per cent. in the black-coated worker group to 31 per cent. in the unskilled manual group. But even if all our children were to come from Class V, we should still expect to find more first-born and fewer later-born children than is in fact the case.

If first-born children are less likely to be ascertained as E.S.N. this finding would fit into a range of studies carried out very carefully by Nisbet (1953), in which he suggests that verbal ability is depressed in the case of children with limited opportunity of adult contact. Later-born children, usually having less of their parents' time, would be more likely to show lowered verbal ability. This might be the additional straw which could increase the likelihood of ascertainment for special education.

But this is a complex question, and there are other points to be considered before a definite conclusion can be reached. Thus mongol children, who form a small but definite group in special schools, are children who tend to be born to older mothers, and therefore tend to occupy later birth ranks. This situation may affect the position described here. From another point of view, the fact that our incidence of first-born children is even lower than that recorded for social class V does not mean that we can discount the family size effect, since our population may be children of families which are larger than the average of their social class. Thus the higher proportion of later-born children may still be an effect of family size, and not of birth rank.

While therefore we can describe the position we cannot find a simple explanation.

Finally, we may note that Douglas (1964) found no evidence that measured ability decreased with lower birth rank, but did find that eldest children did better at school (for their ability score) than younger children.

TABLE VI
Incidence of First-born Children (Per cent.)

Social class	1st-born	Later born	N
III	27	73	67
IV	24	76	34
V	22	78	55

Attendance at Previous School

The average regularity of attendance quoted on Form 3 HP was calculated. Form 3 HP was not available for all children since some entered special schools directly from home and one authority did away with using Form 3 HP for a period. But we had access to 130 forms, and for this group the mean regularity of attendance was 87 per cent, with no difference between boys and girls.

C. PSYCHOLOGICAL

The intelligence quotient at ascertainment was extracted, based on the 1937 Terman-Merrill or the WISC. The distribution is given in Table VII(a).

TABLE VII(a)
I.Q. Distribution (Per cent.)*

	60-	61-69	70-79	80+	N
Boys	10	36	41	12	97
Girls	14	53	27	6	64
Total	12	43	35	10	161

* Not corrected for standard deviation.

First, it is worth noting that I.Q. 70 which at one time was regarded as a sort of upper limit for education in schools for the E.S.N. is now virtually the median, and schools are accepting almost as many children with I.Q. levels above this as below. This is not inconsistent with the idea of educational subnormality, discussed for example by Williams (1965).

The distributions are significantly different ($0.02 < p < 0.05$)—boys with higher I.Q.s are found more frequently than girls. In fact, if one looks at the numbers and not the percentages the incidence of boys and girls in the I.Q. levels below 70, 45 and 43, is nearly the same, and the excess occurs in the higher I.Q. ranges, where there are 52 boys to 21 girls. Again one wonders what causes this, and clearly there are several possibilities.

It is interesting to examine the I.Q. distribution by social class in order to see what is happening, and this is done in Table VII(b).

TABLE VII(b)
I.Q. Distribution by Social Class, by Sex (Number)

	70-	70 and over
Class III		
Boys	17	24
Girls	17	9
Total	34	33
Class IV		
Boys	8	9
Girls	10	7
Total	18	16
Class V		
Boys	16	19
Girls	16	4
Total	32	23

Thus the increased proportion of boys in the higher I.Q. ranges seems to be characteristic of each of the three social classes, though the differences in class IV are not significant.

D. DEVELOPMENTAL

Abnormal Birth Condition

Some abnormality of the birth process was reported in 24 per cent. of the cases. With all but five children one abnormality only was reported.

Of the boys, 19 per cent. had some abnormality reported, but for girls the percentage was 31. This is a trend which is not significant. The analysis by I.Q. shows that perinatal abnormality is associated significantly with low I.Q. ($0.02 < p < 0.05$).

There is no evidence of a relationship between social class and birth abnormality, but the pattern in which the lower I.Q.s tend to be associated with a higher incidence of birth abnormality occurs within each social class.

TABLE VIII
Perinatal History by Social Class, by I.Q. (Number)

Class	I.Q.	Some	None
III	70-	12	22
	70+	6	27
IV	70-	5	13
	70+	3	13
V	70-	7	25
	70+	1	22

Visual Defect

Some defect of visual acuity was recorded in 21 per cent. of the boys and 22 per cent. of the girls. Figures for incidence of visual defect naturally vary according to the criteria adopted, and in any case there is a considerable rise with age. But a survey quoted in the report of the Chief Medical Officer of the Ministry of Education for 1960/61 (Ministry of Education, 1962) although restricted in area, used similar criteria. This survey gives a figure of 20 per cent. of the whole school range, rising to 30 per cent. of older children. It would seem that our figures are of the same order.

There is no significant difference between boys and girls in the incidence of visual defect recorded at ascertainment.

If we break down the figures by social class and I.Q., we find that there is a non-significant tendency for visual defect to be associated with low I.Q. The distribution of visual defect by social class is also uneven, again non-significantly so, but if we compare each social class in turn against the other two we find that the incidence of visual defect in children from social class III is significantly greater than in the other two classes.

TABLE IX
Visual Defect by I.Q., by Social Class (Number)

Class	I.Q.	No defect	Some defect
III	70-	21	10
	70+	24	9
IV	70-	12	2
	70+	15	1
V	70-	21	7
	70+	18	1

Hearing Loss

Hearing loss was recorded by the examiner in the case of four boys only, all four of whom could be placed on the evidence available in the "marked defect" category of the Scottish Council for Educational Research's survey. This survey by the Scottish Council (1956) reported 0.53 per cent. of children falling in this category, figures which are similar to the "barely 1 per cent." reported by Burt (1950) in his pre-war enquiries, and to those suggested by Johnson (1962). Our incidence is slightly higher, but clearly we cannot draw any definite conclusions from it, since the number is small.

Speech

The examiner's description of the child's speech was classified in two ways, either "normal speech" or "some defect recorded". This second category covered every sort of defect noted.

Speech defect, ranging from mild to very severe, was recorded in 31 per cent. of the children, 29 per cent. of the boys and 35 per cent. of the girls; the difference between the sexes was not significant, but the overall incidence was very similar to that found in Tansley's 1951 investigation. Sheridan (1948) found an even higher incidence, 55 per cent. of her group of 100 subnormal children showing speech defects, and Smith (1962), reviewing literature on the speech and language problems of the retarded, found incidences of speech problems of between

8 per cent. and 79 per cent. quoted. These figures are surprisingly different from those expected from a normal population. Thus, Morley (1957) reports a 5 per cent. incidence of articulatory defects at 6½ years of age in the Newcastle-on-Tyne study, with an additional 1 per cent. stammerers. These figures are similar to those of Burt (1950), who reported an incidence of articulatory defects of 6.9 per cent. with just under a 1 per cent. incidence of stammerers. During the school years, the overall incidence of speech defects falls gradually to an incidence of 2-3 per cent. in the higher age ranges. Clearly the incidence noted in this investigation is of a very different order, and emphasizes the importance that Gulliford (1960) and Chazan (1964) have attached to speech and oral communication as a major problem with E.S.N. children.

The relationship of speech defect to social class and I.Q. level is shown in Table X.

Speech defect does not seem to be associated with social class, but there is a tendency for speech defect to be associated with low I.Q. although significance is not quite attained. The pattern is repeated within each social class.

TABLE X
Speech Defect by Social Class, by I.Q. (Number)

Class	I.Q.	Some defect	No defect
III	70-	12	22
	70+	9	24
IV	70-	8	9
	70+	3	12
V	70-	12	20
	70+	5	18

Motor Defect

Some form of postural defect, gait defect, etc., was recorded for 9 per cent. of the sample, 8 per cent. of the boys and 11 per cent. of the girls, a non-significant difference. The relationship with I.Q. and social class (given in Table XI) shows that there is no evidence that motor defect is linked with social class, but as with speech difficulties there is a non-significant

tendency for motor defect to be associated with low I.Q. The pattern occurs within each social class.

TABLE XI
Motor Defect by Social Class, by I.Q. (Number)

Class	I.Q.	Some defect	No defect
III	70-	4	30
	70+	2	31
IV	70-	2	15
	70+	1	15
V	70-	5	26
	70+	1	22

General Physical Condition

The descriptions given were arbitrarily categorized as good, fair or poor. The percentage of the boys categorized as poor was 15 per cent. not significantly different from the 13 per cent. recorded for the girls. The relationship with I.Q. and social class is given in Table XII.

TABLE XII
General Physical Condition by Social Class, by I.Q. (Number)

Class	I.Q.	Good and Fair	Poor
III	70-	26	6
	70+	30	3
IV	70-	14	3
	70+	14	1
V	70-	29	3
	70+	18	5

There is no indication that physical condition is related either to I.Q. or to social class.

Maladjustment

The examiner's impressions of the social and emotional characteristics of the child based on the information available were categorized into five groups, very disturbed, disturbed, normal, stable, very stable and co-operative. This distribution is shown in Table XIII.

TABLE XIII
Maladjustment Incidence (Per cent.)

	Very disturbed	Disturbed	Normal	Stable	Very stable	N
Boys	6	43	24	23	4	91
Girls	3	38	21	38	—	63
Total	5	41	23	29	2	154

If we regard the first two columns as indicators of maladjustment, we have an incidence figure of 46 per cent. This is of the same order as that of other investigations on similar populations—Chazan's (1964) much more detailed investigation gives an incidence of 36 per cent. The percentage of boys who could be regarded as maladjusted is slightly higher than that of girls, nevertheless the difference is not significant.

We can break down the maladjustment figures by I.Q. and by social class (and this is done in Table XIV), but there is no evidence of a significant relationship between maladjustment rating and I.Q., or between maladjustment rating and social class.

TABLE XIV
Maladjustment by Social Class, by I.Q. (Number)

Class	I.Q.	Some	None
III	70—	13	17
	70+	16	16
IV	70—	3	14
	70+	6	9
V	70—	17	15
	70+	13	10

Multiple Handicap

It is often stated that the E.S.N. child has multiple handicaps, and this was stressed by the Chief Medical Officer of the Ministry of Education in his report for 1960/61 (Ministry of Education, 1962) and in various other publications. It is therefore of interest to calculate the extent of multiple handicap in this sample.

If we take hearing loss, speech difficulty, motor defect and maladjustment as four additional handicaps we find the following incidence (Table XV).

If we add visual defect and poor general physical condition the incidence of multiple handicap naturally rises (Table XVI).

We might well consider adding a summer birthday, or low birth rank or low social class, with perhaps as much justification as we use visual defect, for example. Then the "pure E.S.N." child will indeed be very difficult to find, as Stott has suggested. But at the same time we must remember that this approach to multiple handicap, while valid, nevertheless does pose some problems. Thus, if we consider the population in ordinary schools we find that a considerable proportion of the older age ranges are reported to have visual errors. The

TABLE XV
Incidence of Additional Handicaps (A) (Per cent.)

	None	1 or more	2 or more	3 or more	4
Boys	46	54	16	1	—
Girls	44	56	14	—	—
Total	45	55	16	—	—

TABLE XVI
Incidence of Additional Handicaps (B) (Per cent.)

	None	1 or more	2 or more	3 or more	4 or more	5 or more
Boys	37	63	31	9	3	—
Girls	36	64	27	8	—	—
Total	37	63	29	9	2	—

incidence of maladjustment is reported to be high. About one-third of the children must have summer birthdays. 17 per cent. are from social class V. All these handicaps and disadvantages do exist in the non-E.S.N. population, and what really matters is not the incidence of multiple handicap among E.S.N. children, but the differing incidences of multiple handicap in the normal population and the E.S.N. population.

DISCUSSION AND CONCLUSIONS

This paper has looked at some of the characteristics of a sample of children in special schools for the E.S.N. It has been a fact-finding investigation aimed at providing preliminary information as a background to later enquiries. The implications of the different points are for the most part discussed in the body of the article, but general conclusions applicable to the major breakdown categories of sex, I.Q. and social class are given below.

Breakdown by sex indicates that the boys in the sample differ from the girls in that they represent a higher proportion of the sample. They represent a higher proportion of the high I.Q. category, but not of the low I.Q. category. They show a summer birthday effect, whereas the girls do not. No other significant differences between the sexes occurred in this analysis.

Breakdown by I.Q. indicates that the low I.Q. category differs from the high I.Q. category in that it contains similar proportions of boys and girls and higher proportions of children with recorded perinatal abnormality. There is a tendency for the low I.Q. category to contain a higher proportion of children with speech defect and motor defect.

Breakdown by social class (for classes III, IV and V only) indicates that a defect of visual acuity was recorded most frequently in class III children. Otherwise no significant relationships emerged from this analysis.

SUMMARY

This paper presents an analysis of the information available at the ascertainment of a sample of 161 children drawn from eight special schools for the E.S.N. in South Wales. There is a fairly close correspondence between the population from which this sample was drawn and the population of children attending schools for the E.S.N. in England and Wales, with respect to age, incidence, sex distribution and day school/residential school distribution.

The analysis is based on items from the ascertainment procedure for which minimum completion rates of at least 90 per cent. were available. It indicates that 70 per cent. of the children are ascertained before 10 years of age. The summer birthday effect was most apparent in boys from social classes IV and V. Social classes I and II were under-represented in the population, and there was also a low incidence of first-born children.

The I.Q. distribution indicated that I.Q. 70 is virtually the median I.Q. of the sample and that boys appear much more frequently than girls in the higher I.Q. ranges.

There are suggestions that perinatal abnormality, speech defect and motor defect may be associated with low I.Q. but not with social class (only five of the 161 children came from social classes I and II, and in the analysis by social class this group has been omitted).

Poor general physical condition, visual defect and maladjustment seem to occur fairly evenly in both I.Q. categories: visual defect, somewhat surprisingly, seems to occur particularly in children from social class III.

The paper indicates the high incidence of multiple handicap among the population.

ACKNOWLEDGMENTS

The writer wishes to thank the Department of Education and Science for its financial support of the investigations of which these findings are a part. He is grateful to the Directors of Education and the Medical Officers of Health of the Counties of Cardiganshire, Carmarthenshire, Monmouthshire and Pembrokeshire, City of Cardiff and County Boroughs of Newport and Swansea, for giving permission for these investigations to proceed. He wishes to record his appreciation of the co-operation given by the Heads of the various schools, Mr. D. Burn, Mr. E. V. Earl, Mr. T. D. Hopkins, Miss N. Jones, Mr. R. N. Lewis, Mr. H. Llewellyn, Mr. E. Scriven and Mr. J. Sloman, and to Miss M. Lewis the project secretary.

REFERENCES

- ASSOCIATION FOR SPECIAL EDUCATION (1964). Evidence to the Central Advisory Committee for Education (quoted in *The Times Educational Supplement*, June 26, 1964).
- BURT, C. (1950). *The Backward Child*. Third edition. U.L.P.
- CHAZAN, M. (1964). "The incidence and nature of maladjustment among children in schools for the educationally subnormal." *Brit. J. educ. Psychol.*, Vol. XXXIV, Pt. 3, 292-304.
- CLARKE, A. M., and CLARKE, A. D. B. (1958). *Mental Deficiency—the Changing Outlook*. Methuen.
- CROME, L. (1957). In *Mental Deficiency* (ed. by Hilliard, L. T., and Kirman, B. H.), Churchill.
- DOUGLAS, J. W. B. (1964). *The Home and the School*. MacGibbon & Kee.
- , and BLOMFIELD, J. M. (1958). *Children Under Five*. Allen & Unwin.
- FRASER, E. (1959). *Home Environment and the School*. U.L.P.
- GULLIFORD, R. (1960). "Teaching the mother tongue to backward and subnormal pupils." *Educ. Research.*, Vol. II, No. 2., pp. 82-99.
- HOME OFFICE (1963). *Children in Care in England and Wales at March 1963*. H.M.S.O.
- JINKS, P. C. (1964). "An investigation into the effect of date of birth on subsequent school performance." *Educ. Research.*, VI., No. 3, June, 1964, pp. 220-225.
- JOHNS, E. M. (1962). "The age factor in reading retardation." *University of Leeds Institute of Education Researches and Studies*, No. 24, October 1962, pp. 1-7.
- JOHNSON, J. C. (1962). *Educating Hearing-Impaired Children in Ordinary Schools*. Manchester University Press.
- JORDAN, T. E. (1961). *The Mentally Retarded*. C. E. Merrill.
- KEMP, L. C. D. (1955). "Environmental and other characteristics determining attainment in Primary Schools." *Brit. J. Educ. Psychol.*, XXV, Pt. II, 67-77.
- KIRK, S. (1960). "The effects of educational procedures on the development of retarded children." *Proceedings of the Conference on the Scientific Study of Mental Deficiency, London, July, 1960*. Reprinted in *Forward Trends*, 6, No. 1, 5-13.
- LOVELL, K., SHAPTON, D., and WARREN, H. S. (1964). "A study of some cognitive and other disabilities in backward readers of average intelligence as assessed by a non-verbal test." *Brit. J. Educ. Psychol.*, XXXIV, 1, 58-64.
- MINISTRY OF EDUCATION (1963). *Statistics of Education, 1962*. Pt. I. H.M.S.O.
- (1962). *Report of the Chief Medical Officer for 1960/61*. H.M.S.O.
- MORLEY, M. E. (1957). *The Development and Disorders of Speech in Childhood*. Livingstone.
- NISBET, J. D. (1953). "Family environment: a direct effect of family size on intelligence." *Occasional Papers in Eugenics*, No. 8. Cassell.
- ORME, J. E. (1963). "Intelligence, season of birth and climatic temperature." *Brit. J. Psychol.*, 54, 3, pp. 273-276.
- PENROSE, L. S. (1963). *The Biology of Mental Defect*. Sidgwick and Jackson.
- GENERAL REGISTER OFFICE (1960). *Classification of Occupations*. 1960. H.M.S.O.
- SCHONELL, F. J. (1948). *Backwardness in the Basic Subjects*. (4th Edn.) Oliver and Boyd.
- SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION (1956). *Hearing Defects of School Children*. U.L.P.
- SHERIDAN, M. D. (1948). *The Child's Hearing for Speech*. Methuen.
- SMITH, J. O. (1962). "Speech and language of the retarded." *Training School Bulletin*, 58, 111-123.

- STEIN, Z., and SUSER, M. (1960). "The families of dull children. A classification for predicting careers." *Brit. J. prev. soc. Med.*, **14**, 83-88.
- STOTT, D. H. (1963). "How a disturbed pregnancy can harm the child." *New Scientist*, **320**, 13-17.
- TANNER, J. M. (1961). *Education and Physical Growth*. U.L.P.
- TANSLEY, A. E. (1951). M. Ed. Thesis. University of Leeds.
- , and GULLIFORD, R. (1961). *The Education of Slow-learning Children* (3rd Edn.) Routledge and Kegan Paul.
- VERNON, P. E. (1960). *Intelligence and Attainment Tests*. U.L.P.
- WHITE, M. A., and HARRIS, M. W. (1961). *The School Psychologist*. Harper.
- WILLIAMS, P. (1959). "The growth of reading vocabulary and some of its implications." Ph.D. Thesis. University of London.
- (1964). "Date of birth, backwardness and educational organization." *Brit. J. Educ. Psychol.*, **XXXIV**, Pt. 3, 247-255.
- (1965). "The ascertainment of educationally subnormal children." *Educ. Research*, **VII**, No. 2, February, 1956, pp. 136-146.
- WISEMAN, S. (1964). *Education and Environment*. Manchester University Press.

Phillip Williams, Ph.D., *Lecturer in Education, Department of Education, University College of Swansea*

(Received 21 October, 1964)