

EUGENICS AND EDUCATION.

(With special reference to the Medical Examination of
School Children.)

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Introductory paper on "Eugenics and Education". (With special reference to the Medical Examination of School Children.) read by Mr T.E. Jones (Clare) at the fifth Undergraduate meeting of the Cambridge University Eugenics Society in Mr H. Craven's rooms, F. Gibb's Buildings, King's College, on Tuesday, March 5th, 1912, at 8.30 p.m.

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ity of the population of this country.)

As a basis for my paper I take the report of the Chief
Medical Officer of the Board of Education for 1910, which
was issued in November last. As briefly as possible I shall
give a resume of it and then draw a few conclusions, re-
commendations and probable effects. I ask your indulgence
over statistics mentioned which may be somewhat tiring. The
report is a record of the work carried out by the Medical
Officers under the Local Education Authorities in England
and Wales in the field of school hygiene and the medical
inspection and treatment of school children.

At a time when Parliament and Councils are devoting
increased attention to the question of the health of the
people as a whole, it is important to bear in mind that the
health and physical condition of the 6,000,000 children in

our primary schools lies at the foundation of the health of the adult population.

Eugenists look forward to an ideal type of man and woman, but as practical men we must take the present, as it is, and try and find out present wrongs which need clearing away.

The conditions of life, both in respect of personal hygiene and of environment which result in a high mortality among infants under one year, lead at the same time to a higher degree of sickness and disablement among children of school age; and in the same way, and probably in even greater degree, sickness and disease of children, lead to disease and disablement among adolescents and adults. Every step, therefore, in the direction of making and keeping children healthy is a step towards diminishing the prevalence and lightening the burden of disease for the adult; and a relatively small rise in the standard of child health may represent a proportionately large gain in the physical health, capacity and energy of the people as a whole.

As a general proposition it may be said that a State cannot effectually insure itself against physical disease unless it begins with its children, or, to put it more narrowly, "Many of the diseases and physical disabilities of the adolescent and adult spring directly out of the ailments

of childhood. For example, Malnutrition, Debility, Dental Caries, Adenoids and Measles in childhood are the ancestry of Tuberculosis in the adult. They predispose to disease and are, in a sense, both its seed and soil; and thus it is that Tuberculosis in the adult - which may be taken as an example of preventable disease - is in large part the direct development of disease in the child."

Medical inspection of school children has given opportunities for research and enquiry. For example, in 1910, the M.O. for Willesden collected anthropometric measurements of children in his district. In Portsmouth the M.O. paid special attention to those children who attended swimming-baths. In Worcester and Bolton the colour of eyes and hair was carefully noted; in three or four large towns the influence of home surroundings and industrial conditions on the physical condition of children was noted. In Wolverhampton and Merthyr, the home surroundings etc. of consumptive children formed the bases of the M.O.'s research. The physical condition of Jewish and Gentile children; of half-timers; vision and vision-testing; the physical conditions associated with backwardness; the prevalence of rheumatism; the frequency of flat-foot and colour-blindness, all these were investigated. Thus we have a collection of data which the economist; social reformer and eugenist can use.

of open spaces and to the need for the use of the eyesight. Of more particular interest to this society and its work are the tables of all cases of blind, deaf, mentally and physically defective, epileptic and paralytic children.

Section II of the report gives the lists of children examined; the disease suffered from and number of children suffering.

Defective nutrition stands in the forefront as the most important of all physical effects. Defective nutrition is the M.O.'s term; "The Times" expressed the truth when it drew attention in a leader to the fact that a large number of school-children were "semi-starved". The children were grouped according to the standards "Good", "Normal",

"Sub-normal" and "Bad". In Bedfordshire 4,332 were examined, 15.9% were good, 64.0% normal, 20.1% sub-normal.

In Tynemouth the figures were 9.2%, 61.0, 27.0, 2.8% bad.

The industrial district results were not always the worst.

Defective vision receives much attention and yields interesting results. The vision of children in rural areas is, generally speaking, appreciably better than that of children in urban areas; girls suffer more than boys, the left eye is more prone to defect than the right. The M.O. of Liverpool says in his report: "How much of the defective vision in the centre of the city is due to want

of open spaces and to the need for the use of the eyesight for distance and how much of it is due to some hereditary visual defect or to social factors, is difficult to say. Probably the question of nourishment is an important factor.¹¹ Here there seems place for much research into the question of the causation of defective eyesight and into the relative importance of the parts played respectively by hereditary, nutrition, home conditions, school-lighting, and educational methods. The reason for the preponderance of serious defects in the vision of girls, as compared with boys also requires elucidation. The condition of strabismus or squint also requires investigation. steadily rises between 20 and 30 years. Defective hearing is closely allied with defective vision and may be caused by (a) blocking of the ear with wax or other foreign body (b) middle ear diseases (c) the presence of adenoids. The former can be easily treated. The exact cause of adenoids is unknown and they tend to "run in families".¹² Here is again place for the seeking of causes and whether there is any truth in adenoids being inherited. They result in many adult diseases and sometimes lead to deafness by closing the eustachian tube. The percentage of children afflicted with adenoids varied from 85% in Shrewsbury to 17% in Darlington. Many cases

have been treated by an operation, but it is sometimes forgotten that an operation during the very impressionable age of small children may lead to unexpected results owing to their sensitive natures.

In one district where a special investigation was carried on, on "Flat-foot", it was found that 28·8% of the boys and 31·7% of the girls had what the M.O. called "True-flat foot", that is, feet in which the ligaments become stretched and the whole inner border of the foot touches the ground.

The dread disease of tuberculosis plays havoc in all ages of man, but it is greatest between the ages of 1 and 5, and 15 and 20, and steadily rises between 20 and 30 years.

The existence of a "family history" of tuberculosis was investigated in certain districts. In Worcester 32·6% of children examined had relatives suffering from the disease. In Surrey 60% belonged to families previously infected.

Here again, it would be interesting to know definitely the parts played by environment and heredity,

Children, suffering from this disease are sent to a sanitorium or open-air schools if possible, but at present accommodation for them is very limited. A great extension is required if we intend eliminating this disease. There

should be (1) a system established for detecting children suffering, or likely to suffer, and the maintenance of complete records with regard to them; (2) the practicability of introducing a system of treatment which shall be both preventive and curative in character should be considered. The extension of medical inspection will give the first. An improvement of the hygienic conditions of the schools and of general physique of the child may help the second.

One curious fact is brought out in dental disease doubtless investigation. It is this: The prevalence of dental disease is somewhat greater among the children of parents more favoured as regards their social position in life than among the children of the very poor. Is it because they receive more pennies for buying sweets than does the poor boy? In this case the latter is better off for once.

In Cambridge Dental Clinic 2,784 examinations for bad teeth were made in 1910 and 8,579 since its opening in 1907. test physical handicaps of school children as a class is much of the foregoing is preventative and due to bad environment, so, before examining the second part of the report let me reproduce the C.M.O.'s words. "Speaking generally," he says, "it may be said that out of the 16,000,000 children registered on the books of the Public Elementary Schools of England and Wales, about 10 per cent suffer from

from a serious defect in vision, from 3-5% suffer from defective hearing, 1 to 3% have suppurating ears, 6 to 8% have adenoids or enlarged tonsils of sufficient degree to obstruct the nose or throat and thus require surgical treatment; about 40% suffer from extensive decay of the teeth; 1% from consumption in readily recognisable form, from 1 to 2% are afflicted with heart disease and a considerable percentage of children are suffering from a greater or less degree of malnutrition. It cannot be doubted that in the aggregate, this category of disease means a serious amount of suffering, incapacity and inefficiency, which at least must greatly limit the opportunity and diminish the capacity of the child to receive and profit by the education which the State provides and must involve a continual increase in the national burden of sickness and disablement." (p. 258.)

In another part he says: "It is clear that one of the greatest physical handicaps of school children as a class is that of malnutrition. It is certain that malnutrition and physical defects are closely associated and react upon each other, but it is difficult to determine their exact relation in each child, or to say in what degree malnutrition causes the other physical effects. Merely to increase the supply of food would in many cases not solve the complex

problem of the individual child, although in many cases lack of food lies at the root of the mischief."

Let us now turn to the problem of the abnormal child - These are weighty words and may astound some of you. A problem which is becoming much more concrete and urgent. Truth is often strange and sometimes unappetising. But when formerly these children were ignored put into a corner in school and laughed at by their fellows. Now they are searched draw the fathers and mothers of the future; a large proportion but a great deal remains to be done, in the accurate and tition of our manual workers, miners, railwaymen, policemen, practical classification of these children and in devising soldiers and sailors it is a good thing that we attend to education which shall be appropriate to the limitations and them. It was only this month that I read that the percentage disabilities of the several classes. This applies chiefly of rejections among recruits for our army was increasing. to feeble-minded children and to children suffering from vari- while at the same time the standard was being lowered. This ova forms of disablement and from constitutional disease. fact shows deterioration.

While the children are with us we must attend to them. One other fact should be noticed. Much of the money perhaps the working of Eugenics may have solved the problem spent on education must be wasted because the children are for the future generations. On humanitarian grounds it seems not fit to receive the full benefits owing to disease. You, reasonable to give most attention to those who need it most as well as I know, how any physical disease hinders our men- but it must not be forgotten that the incurable child will tal work. Some of us, perhaps, do not even require a disease. usually absorb far more of the resources of the Education to prevent it.

Authority than the child who is curable, just as the Inmate Professor Punnett in his book "Mendelism" says: "Better feeble-minded and pauper absorb the resources of the State. environment, better hygiene and better education are good And from the view of the present State there is much to be said for the zygote because they help him to make the fullest use in favour of first concentrating national resources upon the of his inherent qualities." Let then, the zygote have the child who possesses educational disabilities which are remediable, best possible conditions under which to work. able, while from the view of the future State we should tackle the problem of the abnormal child.

At present the abnormal child can be treated under the following acts.

Let us now turn to the problem of the subnormal child -

(1) The Public Health Acts provide for preventive measures, sanitation and the establishment of hospitals a problem which is becoming much more concrete and urgent.

Formerly these children were ignored, put into a corner in school and laughed at by their fellows. Now they are searched for the reception of sick who are not "paupers".

(2) The Elementary Education (Blind and Deaf Children out, but a great deal remains to be done, in the accurate and

Act) 1893 deals with the education of blind and deaf practical classification of these children and in devising

(3) The Elementary Education (Defective and Epileptic education which shall be appropriate to the limitations and Children) Act 1899 under which children who are physically defective, e.g. crippled, and mentally defective to feeble-minded children and to children suffering from various forms of disablement and from constitutional disease.

greater or less degree.

While these children are with us we must attend to them.

(4) Under the Education (Provision of Meals) Act 1906 Perhaps the working of Eugenics may have solved the problem arrangements may be made for the feeding of under-nourished children. This act is optional.

reasonable to give most attention to those who need it most,

(5) The Children Act 1908 provides for neglected children but it must not be forgotten that the incurable child will

usually absorb far more of the resources of the Education

During the past few years School Clinics have come into Authority than the child who is curable, just as the lunatic, existence. Their functions are manifold, feeble-minded and pauper absorb the resources of the State.

(a) To serve as a medical inspection.

And from the view of the present State there is much to be said (b) To serve as a medical treatment.

in favour of first concentrating national resources upon the

The purposes of the Clinic may be here stated (to be omitted child who possesses educational disabilities which are remediable.)

able, while from the view of the future State we should tackle

(1) The further and fuller examination of children referred,

the problem of the abnormal child.

as a result of medical inspection in the school.

(2) At present the abnormal child can be treated under the following acts.

- (1) The Public Health Acts provide for preventive measures, sanitation and the establishment of hospitals for the reception of sick who are not "paupers".
- (2) The Elementary Education (Blind and Deaf Children Act) 1893 deals with the education of blind and deaf.
- (3) Let us turn for a moment to the work done at some of these special schools allowed under Acts of Parliament. In Children) Act 1899 under which children who are physically defective, e.g., cripples) and mentally defective and Defective children under the Board of Education, containing (including feeble-minded children) are provided for in 1910 there were 327 in 1911 328 schools for Blind and Deaf children and 3,750 scholars of whom 11,300 were classified as mental-greater or less degree.
- (4) Under the Education (Provision of Meals) Act 1906, arrangements may be made for the feeding of under-nourished children. There are 28 schools for the blind, accommodating 2,293 ed children. This act is optional.
- (5) The Children Act 1908, provides for neglected children. Their function is two-fold.

During the past few years School Clinics have come into existence. Their function is two-fold.

- (a) To serve as a centre for Inspection.
 - (b) To serve as a centre for treatment.
- The purposes of a Clinic may be here stated (so in existence.)
- (1) The further and fuller examination of children referred, as a result of medical inspection in the school.

(2) There are 48 schools for the deaf accommodating 4,183 children. The examination of children referred, in regard to fitness to attend school, or to undertake school journeys, physical exercises or swimming.

(3) The examination of candidates for admission to large number of normal mentally but unlike other normal special schools, i.e., schools for the deaf, Blind, children Mentally and Physically defective and Open air schools.

(4) The periodical supervision of all cases of consumption.

Let us turn for a moment to the work done at some of these special schools allowed under Acts of Parliament. In 1910 there were 327, in 1911, 338 schools for Blind and Deaf and Defective children under the Board of Education, containing 21,150 scholars of whom 11,309 were classified as mentally defective and 3,756 as physically defective and under 16 years of age.

There are 38 schools for the blind, accommodating 2,295 children. The chief aim of these schools is to provide a complete training in the trades suitable for the blind, e.g., basket-making, mat-making, brush-making, typewriting, machine and hand knitting. There is little difficulty in securing adequate proficiency in the case of the majority of the pupils; there is considerable difficulty in securing subsequent employment. Much could be said here regarding the training given, but time does not permit. The training is much too limited. In the past these children have been badly treated by their school-mates and by their teachers, but wiser counsels now prevail. The extent of

There are 48 schools for the deaf accommodating 4,183 children, a large number of whom are deaf from birth (61%). Meningitis is the chief cause of deafness among the others.

In the training of the deaf it must be remembered that a large number are normal mentally, but unlike other normal children in that one avenue of approach to the brain is closed - that of hearing - with the result that speech, which depends for its development on auditory impulses, is partially lost.

In consequence there is an absence of power to express ideas in words and sentences, and the chief difficulty in the education of the deaf as the establishment of this power of verbal expression. A satisfactory result of the education of the deaf is the increase in number of those who enter useful em-

ployment and a decrease in the number of the deaf and dumb-minded children falling on the school registers, failing to register, failing to attend, and rising as high as 12% in the County district. This would yield a saving of £100,000 per annum. Still, all this, although good, does not prevent the increase in the number of deaf-mutes, because when 16 years of age they are free to go out into the world, and later, beget others of their kind, who become an increasing, heavier burden on the community.

The problem of the Feeble-minded children will, no doubt, be of greater interest to the Society, as it is one of the first planks in its programme. In the past, these children have been badly treated by their school-mates and by their teachers, but wiser counsels now prevail. The extent of still to be provided for. It is seen therefore that only

feeble-mindedness among children varies from .05 to 2.6% in various localities (Herts. 2.5; Lancs. .11). It is interesting to note that the returns received by the Chief Medical Officer from the local Medical Officers compare, as a whole, somewhat closely with the estimates made by the Royal Commission based upon examination in a few typical areas only.

"In conclusion", the Report stated, "following the data of the medical investigators, we may say that in England and Wales, the number of mentally deficient children may be expected to be, in the areas urban and rural, .79% of the children on the school registers, falling as low as .28% in a northern colliery district and rising as high as 1.12 and 1.24% in urban areas.

Generally speaking, therefore, the percentage of feeble-minded children in any community varies from .25 to upwards of 1%. This would yield a total number of feeble-minded children on the school registers of between 15,000 and 60,000. It is almost certain, therefore, that the estimates of the Royal Commission have been proved, by the statutory medical inspection of school children in every part of the country, both in 1909 and 1910 to be approximately accurate. They, the Royal Commissioners, estimated that there were 150,000 feeble-minded persons in England and Wales, of whom 48,000 were children in Public Elementary Schools. Some 12,000 of these are at present provided for in some degree in special day (132) and residential schools, leaving about 36,000 still to be provided for. It is seen therefore that only

one-fourth of the total necessary provision has been brought into existence under the Elementary Education (Defective Children) Act of 1899, which is a permissive measure only. An agitation to make it compulsory is necessary. The number of schools for Mentally Defective children in 1911 was 169, with an average attendance of 11,309, whose education costs the State from £10 - £12 per head per annum in day schools and £25 - £35 per head in residential schools. From one point of view, all this money is an economic waste, as we receive little in return and allow most of these children to be free when they attain the age of 16.

62. Doing no paid work; Dismissed from Special School

The after care of the "Feeble-minded" is a problem which must be faced sooner or later - the sooner the better. The justification of educational policy, whether for normal or abnormal children, is to be sought almost entirely in the career records after the expiry of school age. In the case of normal children it is now recognised that a policy of "laissez-faire" in regard to children is little short of disastrous; the evils of "blind alley occupations" followed by periods of unemployment and consequent carelessness and degeneration, can only be met by determined social and educational effort carried out in a scientific spirit. If this be true of the normal child, it is still more the case with the mentally enfeebled section of the children. If local employment and care committees are essential to the completion of the national school system, it is clear

that to neglect these or other safeguards in the case of the feeble-minded children is to court failure at the most critical period in the life of the child.

"After Care" committees have been founded in some large towns, and they provide work, if possible, for those children able to do it. They are voluntary. The Birmingham After Care Committee, formed in 1901, has collected information concerning 763 cases of feeble-minded children since its formation. In a report recently issued these cases are classified thus:-

At remunerative work (not always a living-wage) 173;

At home 62, doing no paid work; Dismissed from Special School as ineducable, 32; Transferred to ordinary schools, 84, to

Deaf Schools, 8, to Special Schools, 4. At Residential Special Schools, 44; in Workhouses, 43; in other institutions 65; died, 25; lost sight of 210.

This is a weakness of these committees, that they lose sight of a large number of cases.

What is required is:-

(a) More accurate and useful classification, including the differentiation of the educable from the ineducable, and the appropriate grouping of the children according to the nature of the education from which they may be expected to profit.

(b) A more practical, manual and industrial training.

Again, excitability or undue fatigues would be better adapted not only to the degree of mental defect, but also to the home surroundings or half-time labour, & the age, sex, and physical capacity of each child.

(c) More effective after-care, or better, the raising of some definite mental disorder prevalent in the state to which the sufferer belongs. The value of the Report for 1910 by the Chief Medical Officer cannot be overestimated. It is a national custodial care for all ineducable feeble-minded children and such educable feeble-minded children as may require it, including power to provide for such detention as may

later, Mr Whetham says "The report discloses a state of affairs which is hardly creditable to a civilized nation. The Bill promised by the Prime Minister this Session.

Thus in brief the work of medical inspection in our schools. Since most rule in a great number of the homes where all the responsibility for the welfare of the children should naturally rest. But the parents themselves have all recently proved of great assistance to students of Eugenics. The medical inspection of school children was first undertaken in 1906, and though no efforts have yet been made to look beyond each individual child, it is only a question of time for the subject of the influence of the hereditary factor to be taken into account. It may be too late to do much for the children of to-morrow, but when they in turn become parents, the education and after-care are desirable for a child whose condition is due to adenoids, producing deafness and for one who comes from a constitutionally deaf family. Certainly, as regards the education of girls, a determined effort must be made to secure profitable instruction in the things that are essential to a satisfactory home life.

Finally, and most important of all, it is necessary to investigate again, excitability, or undue fatigue, caused by mischievous home surroundings or half-time labour, require other remedies to be sought than a similar condition brought about by some definite mental disorder, prevalent in the stock to which the sufferer belongs. The value of the report for 1910 by the Chief Medical Officer cannot be overestimated. It is a national document of the highest importance and most profound significance. Reforms we must attack the fountain-head - the Board of Education. Mr Whetham says, "The reports disclose a state of affairs which is hardly creditable to a civilised nation. The first impression received on reading is that incredible negligence must rule in a great number of the homes, where, after all, the responsibility for the welfare of the children should naturally rest. But the parents themselves have all recently passed through the schools of the country and it is therefore largely to the defective nature of the education and training that they themselves received therein, that some proportion of this national reckoning of suffering and disease must be attributed. It may be too late to do much for the children of today, but when they in turn become parents, the education authorities have only themselves to thank if the conditions of child life at home are not markedly more healthy and intelligent. Certainly, as regards the education of girls, a determined effort must be made to secure profitable instruction in the things that are essential to a satisfactory home life.

Finally, and most important of all, it is necessary to investigate how much of this load of misery and defect is due to bad conditions in the homes and how much to definite hereditary qualities, which can only be bred out of the race by some form of selective parenthood." "I am constantly confronted with the abominable effect of parents bringing up their children in ignorance and misery.

I think we can agree with these weighty words. Many other educationalists will agree that much of this suffering is due to the defective nature of the education and training given. To obtain reforms we must attack the fountain-head - the Board of Education which produces yearly its "Code", containing regulations of what may be done and taught and what may not, and has its inspectors to see that these regulations are carried out.

Some broadening spirit is at work and special courses in hygiene, physical training, have been produced and made compulsory. And, last year (Nov. 1910) a special memorandum on the Teaching of Infant Care and Management to girls was issued by the Lady Medical Officer. This is progressing. An extension of lessons in cookery, housewifery and laundry is also taking place. All

This task which I believe must be undertaken in almost superhuman for we shall break down the chimney. America, Eugenic ideas are taught in Elementary Schools and instruction given in matters of physiology and sex-hygiene. When

will we take this matter seriously? Much disease and mental worry would cease if we taught children the essential facts of life, instead of allowing them to find them out in vicious ways.

I shall be told that this is the work and duty of the parents.

I agree. But, many of the parents know as little as their children of their own constitutions, schools for mothers are already coming into existence. Mr Cecil Chapman, a London magistrate said lately at a meeting of the London Eugenics Society, where he took the chair, "I am constantly confronted with the abominable effect of cant, hypocrisy and concealment on this subject (sex-hygiene). These are the giants you have got to confront and conquer before you do any good. I have been constantly consulted by mothers and occasionally by fathers as to how this matter ought to be dealt with, with regard to their innate qualities of the child are allowed to develop along its children. A month ago, almost for the first time, I met a doctor who told me that all his children were carefully informed by him and their mother as to the real facts." Would that everyone followed this example. Of what use and value is it to tell a child when he asks certain pertinent questions that "an angel brought him" or "that Father Xmas dropped his baby brother down the chimney." As he gets to know the truth, he will not thank his parents for misleading him by fairy tales.

This task, which I believe Eugenists must take up will be almost superhuman for we shall knock against conventions, customs and Mother Grundy.

True discipline of self can only be obtained when the self is known and the self cannot be known unless the essential facts of life are known.

Education is a form of nurture and it would be very desirable to settle definitely what it might and might not be expected to accomplish in order to obtain the best results.

Everything revolves around a nation's children. The child is the pivot of the State. A healthy race of children is its best and highest capital. The State that neglects its young will surely deteriorate. On the other hand, a State that sees that the best type of child is produced and then gives this type the highest form of education is sure to rise. The first can only be got by encouraging the desirable would-be parents to come together and by keeping the undesirable apart. The second by a perfect system of education by means of which the innate qualities of the child are allowed to develop along its own lines without being hindered by the apparent wise, but unwise adult, who should only act as guide.

Locke, in his "Thoughts on Education" says "Each man's mind has some peculiarity, as well as his face, that distinguishes him from all others and there are possibly scarce two children who can be conducted (instructed) by exactly the same method." the powers and in which therefore they have the great-

Every healthy child wants to eat, to drink, to run about. It instinctively desires to talk, to listen, to act, to draw, to dance, to sing, to know the "why" of things, to construct and destructure. are engaged in some form of skilled labour,

Thus, the true function of education should be to foster these - to foster growth physically, mentally and morally.

Education is a form of nurture and it would be very desirable to settle definitely what it might and might not be expected to accomplish in order to obtain the best results.

of who, for instance, can reckon the harm done by an educational system which has tended to remove to clerical occupations the best young blood of our artisan workers, a system which tends to teach them to look down upon hand-work of any kind ? that is, preparing the world for the child; Eugenists go do or, who can sum up the injury done to our rural areas by the neglect of the opportunity which has lain ready to hand for forty years of using the village schools in such a way as to check, and not to quicken, the drift of a healthy peasantry from healthful labour in the country to the sordid parts of many of our overcrowded industrial towns? Be going to alter and change or, again, who can reckon the harm which results from in turning out children into the world less fitly adapted than they might have been, to enter into that particular sphere of the nation's work which lies within the limits of their own, inherited powers, and, in which therefore, they have the greatest chance of becoming happy as well as useful members of the community? charge their several shares of their country's work. Ask For example, if 80% of the fathers of the children in a certain school are engaged in some form of skilled labour, as weavers, engine fitters, joiners and the like, we should have, it is true, very little grounds for expecting that the sons would severally follow the identical trades of their respective fathers, but very strong grounds for expecting that approximately the same percentage of the sons would be found in the ranks

I have tried to give you the general idea of the education of skilled labour in some form or other. Here, again, we consider averages. The "clever" and "dull" boys must be separately treated. From the highest type of parent, just as we Social reformers place much stress on the best environment - that is, preparing the world for the child; Eugenists go deeper and say - prepare the child for the world by giving it the best qualities through good parents. Heredity and Education is a large topic and I wish to close this paper by making a few references to it, because I believe that the deeper and fuller researches into the inheritance of not only physical but mental and moral qualities are going to alter and change our views on education and thus bring about a change in the educational system itself. Each of us can recall to mind a case what should be the end of our system? Once we know that the means will be found. Success or failure must be measured, not inside school or college walls, but by the skill and spirit with which men and women who have spent their childhood in our schools discharge their several shares of their country's work. Ask any teacher about the promise held by a pupil, and he will tell you about the child's abilities and then is almost certain to add something about the good or the bad home influences to which he is subjected. Reduced to two words, he says it all depends upon the Nature and Nurture of the Child. Even during school-life the good done by the Special School in the day-time is largely undone when the children go back to their homes at night.

I have tried to put before you the case of the subnormal or Galton in his "Standard Table of Descent" deals with the Nature of the Child and arrives at this result. We get the highest type of child from the highest type of parent, just as we get the lowest type of child from the lowest type of parent. The school aspect of this is that by examining the parentage of the scholars we can fairly well know what the average of the children are likely to become and can treat them accordingly. Then, we shall not fall into the danger of unduly hurrying development, in disregard of Nature's vital laws by an extended intellectual training, which requires considerable mental strain during adolescence when the equilibrium of the system is least assured, and which may break down those who are not of a vigorous stock. Each of us can recall to mind a case where a brilliant boy, or scholar, has "broken down" under the strain of great mental work.

Again, the children in our Special Schools for Defectives, taught at a cost per head three or four times as great as the ordinary child, pass out from school to society. The After-Care Committees have no permanent hold over them. They are mainly left to blend with the general mass of the population; many fall into the ranks of the pauper lunatics, who have increased fourfold in the last forty years, and now muster about 80,000 strong, costing the State over £2,000,000 annually. Even during school-life the good done by the Special School in the day-time is largely undone when the children go back to their homes at night.

I have tried to put before you the case of the subnormal or defective child; and have said something of the normal child. What of the supra-normal, clever, brilliant child who springs up in different sections of society at various periods. Our system of education should be such that the powers of such an individual may be developed to the highest for his own and the State's benefit. No consideration of wealth, position or caste should count in this case. Ability and character alone should be the test.

One other point which I think Heredity and Eugenics will help us to solve and that is the question of Co-education. Personally I am a believer in it up to a certain period. Considering the school as a large home the most natural process is to allow the boys and girls to grow up together, while their development runs fairly parallel. But, this changes about 12 to 14 years of age, when the crucial period of life is entered upon. Here education should begin to differ but the question of the relation of the sexes in education would require us to consider the psychology of sex differentiation, which is much too wide a topic to be treated in a short paper.

Men and women should be copartners in educational effort, just as mothers and fathers are partners in the home.

A true educational system would develop to the full, the innate physical, mental and moral qualities in each individual.

This is the individualistic side, and as each individual forms part of a community, there is a communistic side which has been put thus by one educationalist:-

"Our English system should start from and end in the brain-workers and the hand-workers of the nation, improving every arm of the service and deliberately fostering that spirit of co-operation between them all and that feeling of responsibility and loyalty in the doing, without which, no work great or small, ever comes to a good end. And to secure all this the study of parentage is everything."

"Bless not thyself" wrote an old philosopher "that thou wast born in Athens; but among thy multiplied acknowledgements, lift up one hand to Heaven, that thou wast born of honest parents, that modesty, humility and veracity lay in the same egg and came into the world with thee.
