

THE FIGHT
FOR OUR NATIONAL INTELLIGENCE

BY THE SAME AUTHOR

PSYCHOLOGY AND SOCIAL PROGRESS

YOUR MIND AND MINE: AN INTRO-
DUCTION TO PSYCHOLOGY

A GUIDE TO MENTAL TESTING

THE FIGHT FOR OUR NATIONAL INTELLIGENCE

BY

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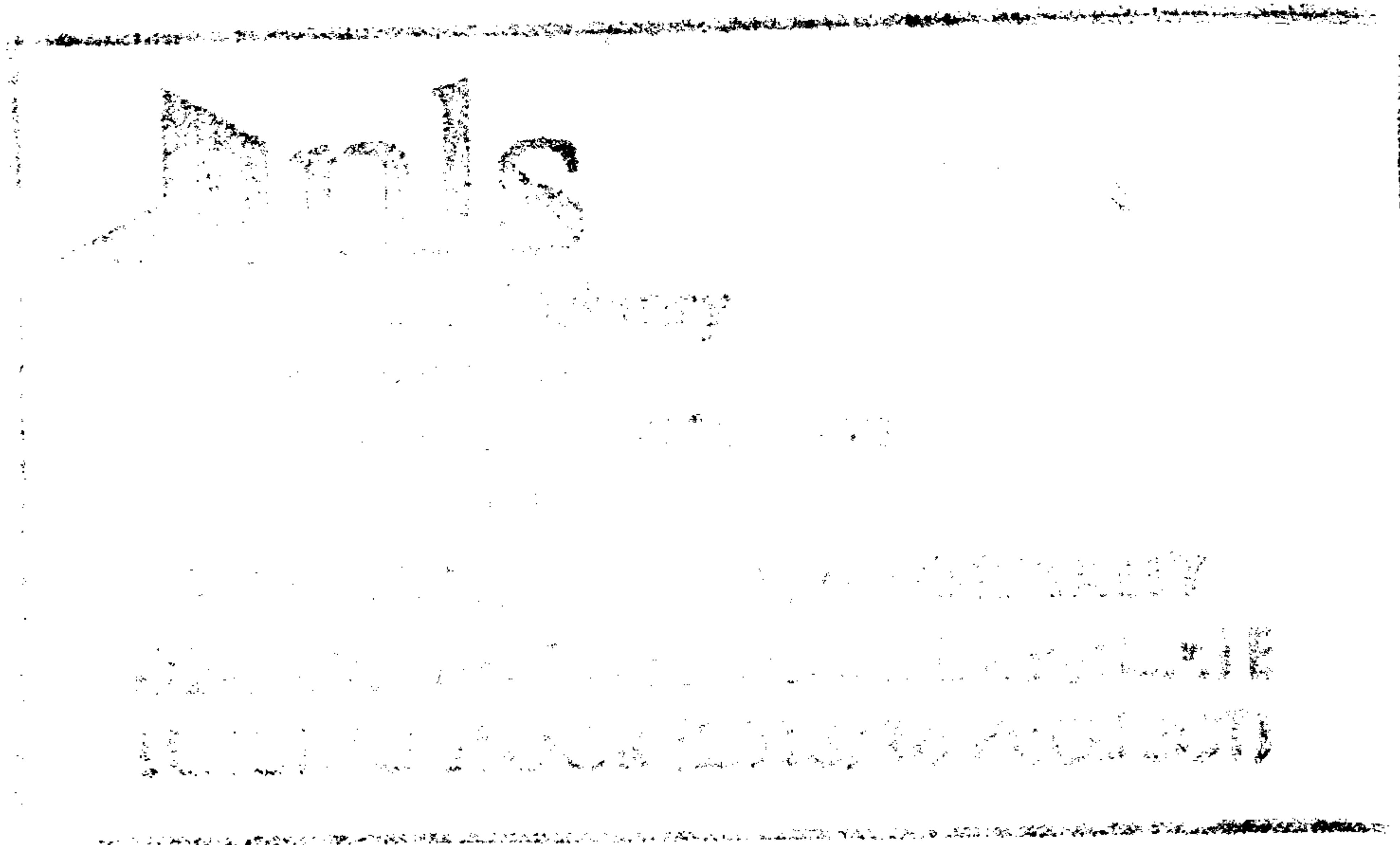
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WITH INTRODUCTIONS BY

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INTRODUCTION

DR. CATTELL has asked me to introduce to the general reader the results of a research recently undertaken and which are already known to those of us who are specially interested in eugenic and allied questions. I do so gladly. An enquiry into the nation's intelligence, and the relation which this bears to the differential birth rate, affect vitally so many social problems that the conclusions arrived at deserve the widest possible circulation and the most thoughtful study.

The gist of Dr. Cattell's discovery is this, that the birth rate is falling much more rapidly amongst those social classes in which intelligence is relatively high than it is in those in which it is relatively low. The level of the nation's intelligence is therefore steadily falling. So much so that if matters continue as they are now going our author reckons that in 300 years from now half the population will be mentally defective.

Careful perusal of the conditions of the research and of the argument does not reveal any obvious fallacy in either. The conclusion is of sufficient importance to merit a much larger enquiry, even an enquiry under Government auspices, with the view of confirming, or modifying, Dr. Cattell's findings. Assuming no fallacies to be present, the evidence seems overwhelming, from his intensive study of two typical areas, that in this country the birth-rate is inversely related to the intelligence level *throughout the whole range of intelligence*.

Eugenists in particular will note with interest that Dr. Cattell's researches afford abundant proof that mental capacity is largely determined by hereditary factors. We may be more convinced than we might otherwise be on this point for the reason that the enquiry has been made by one who, in addition to carrying out original research in this field, has had several years of first-hand experience in clinical psychology.

When Dr. Cattell comes to consider the causes of this "slant" in the differential birth rate, he is confessedly dealing with questions involving considerable speculation. All the same his analysis of these causes, which it is assumed are in the main psychological rather than physical (e.g. biochemical), and especially his references to what, for lack of a better term, he calls "social melancholia," form a valuable contribution towards a problem which has so far defied a solution on purely economic lines which is anything like so convincing.

Dr. Cattell, having stated the symptoms of the disease and having suggested the causes, proceeds, and not without hope, to outline his treatment. He warns us that it behoves us to deal promptly with the dysgenic trends to which he makes reference if we are to avoid a national disaster. (Incidentally our author gives it as his opinion that the other European countries are in much the same plight as we ourselves are.) If we really want to build an A1 nation, we must take this matter to its logical conclusion and employ the whole machinery of our medical services, not merely for "preventive medicine" in the narrow sense, nor even for "ante-natal hygiene," but for large scale efforts along eugenic lines.

There is the same block (introduced by prejudice and ignorance) against making birth-control teaching available to the women who need it most as there was in Bradlaugh's and Besant's day. And, *pace* the Brock report, legalisation of voluntary sterilisation in the case of the hereditarily unfit still hangs fire in this country. Whilst we are striving after these two so obvious advances in "negative" eugenics, we must forge ahead in regard to "positive" efforts also. That means that we must urge the mobilisation of the medical services in the psychological field. Dr. Cattell indicates quite clearly the ways in which the advance may be made. He also warns us with equal clarity what is the inevitable course of the national disease if it goes unchecked. Shall we be wise in time?

HORDER.

INTRODUCTION

It has been conclusively proved by many enquiries that for many years past the average child has been living in a worse home than the average parent. No doubt this is a statement the form of which will fail to please the scientist. Nevertheless, it represents in the fewest words a truth of the utmost importance to the nation. If the homes of this country could be divided into two equal halves in accordance with their fitness as dwelling-places, it would then be a mere truism to assert that the number of parents living in the better homes would be equal to the number living in the worse homes. The point to be noted is, however, that the families born in these worse homes are on the average larger than the families born in the better homes; the inevitable result being that more than half of the children are born in the worse half of the houses. Can anyone deny that the quality of the home leaves some permanent effects on the qualities of the persons born therein? Does not this fact, therefore, point to the probability that as a nation we are now steadily deteriorating?

Dr. Cattell's special enquiry, described in this volume, was, however, concerned not with the physical qualities of the homes, but with the intelligence of the children born therein. His results indicate that generally speaking the less intelligent children are found in larger families than are the more intelligent, and that for this fact two different explanations may be adduced. Of these the most obvious is that the larger the family the poorer the home, this greater poverty leaving an indelible stamp on those suffering from the consequent inferior education and nutrition. Moreover, this differential effect may be increased in consequence of the influence

of the members of the same family on each other. The cure for this evil is simple enough in theory, however difficult it may be in practice. What has to be done is to improve the surroundings of those now living in inferior homes, this inevitably improving the non-inherited qualities of those issuing therefrom. Dr. Cattell has proved by his previous publication that he is keenly interested in this side of the subject.

But is this the whole story? May there not be some other explanation of this correlation between the size of the family and the intelligence of its members? What we have to consider is whether there are not many, like Caliban, "on whose nature nurture can never stick," or at all events sticks but uncertainly or loosely. In fact, here we touch on the old controversy concerning the relative magnitude of the parts played by heredity and environment, a controversy on which in my opinion much time has been wasted. If both factors should always be held in view when considering social reforms, is not their relative importance, whatever that may mean, a question which at all events should not be allowed to stand in the way of practical measures?

In discussing these problems, it would be pleasanter if we could avoid all references to social stratification, a subject which always creates much intellectual heat and smoke. This will, however, remain impracticable as long as the existing lower birth rate of the richer classes persists; for this must inevitably cause a very large and continuous flow from the poorer strata to fill up the gaps thus left in the richer ranks of society. Those thus rising are aided in their ascent by all those natural qualities which help them to succeed in the more gainful occupations, whilst their efforts are often hindered by family cares. The result to be expected from this filling up of the vacancies in the ranks of the better paid by selection from the worse paid is, therefore, that the richer classes, including the highly skilled workmen, will become in comparison with their poorer neighbours progressively more and more intelligent, reliable and

persevering, but also more ambitious, luxurious, selfish, less fond of family life, less physically strong and less naturally fertile, this infertility being due to many causes. Stated thus, have the poorer classes much cause to be offended by this comparison? In any case the probable results of existing conditions must be faced, more especially because any further differentiation between the qualities of the different social strata would tend to promote internal friction. The differential birth rate will in the long run prove to be one of the greatest of all the impediments to social progress.

When dealing with the effects of that correlation between the size of the family and the intelligence of its members which Dr. Cattell has proved to exist, fortunately for his tranquillity he is not primarily concerned with social differentiation. Whatever its basis, this correlation must, as he has proved, result in a steady deterioration in the average intelligence of the nation, a deterioration the rate of which he has attempted to measure.

The path of eugenic reformers, that is of those who are striving to improve the very nature of the men of the future, without reference to the nurture which will be found sticking on to them more or less firmly, is in fact bestrewn with obstacles, and Dr. Cattell's object is not only to indicate their existence, but also to shew the ways in which they can be evaded.

The investigations described in Chapter II of this book, the importance of which has already been noted, were undertaken by Dr. Cattell after being elected by the Eugenics Society to one of its Research Fellowships, to which my name has been attached. As I have been thus honoured by the Society with which I have been for so long connected, I have naturally been especially interested in Dr. Cattell's work; but I now mention this selection merely to emphasise that he was chosen by an impartial body to undertake a very difficult investigation needing much special knowledge. Since graduating from King's College, London, Dr. Cattell has

conducted researches in several distinct fields of psychology, but principally into the means of measuring intelligence and temperament. These studies were pursued further when he was on the staff of University College, Exeter, and since then have been continued by him, especially those connected with the measurement of the intelligence needed in different occupations and the tests of temperament. He carried on these and other studies when at University College, Exeter, at the London Child Guidance Clinic, and at the Psychological Clinic at Leicester. It was not, however, until he wrote his book on *Psychology and Social Progress* that his enquiries led him definitely towards the investigation of eugenic problems. All these facts were doubtless known to the Eugenics Society when he was selected for this investigation, and the results obtained amply justify their choice.

This book is not a mere description of this one enquiry, but is intended to indicate the broad conclusions arrived at by its author on the whole eugenic problem. If I were to find myself in accord with every word in a new book covering so wide a field, I should probably feel that it was not sufficiently original to be worth publishing; whilst the mere fact that I am writing this introduction proves that I wish it every success, being in accord with its author on all the main eugenic issues.

If this fearless book should, as I hope, lead to a widespread discussion of these difficult problems, and if the dismal forecasts made by Dr. Cattell and myself should thus be proved to be without solid foundations, I should rejoice sincerely. To be convicted of having talked nonsense would not be pleasant, but that would be as nothing compared to the relief to my mind which would result from the conviction that our nation is not steadily going downhill in certain valuable hereditary qualities; for if this decline is allowed to continue, there can be no doubt that it will lead to increased unemployment, civil strife, and external wars. At present I can find no loophole of doubt through which to seek for

such consolation. There are, we know, many whose minds are so constituted as to make them unable to accept a conclusion if it be unpleasant, a psychological condition which ought to be more widely recognised. As to those who see these dangers ahead and yet refuse to play their part in trying to guard against them, they are either no patriots or cowards. We cannot afford to wait for further knowledge before beginning to take action and we must boldly face the risks which will inevitably accompany our proposed reforms.

LEONARD DARWIN.

September, 1936.

INTRODUCTION

TO-DAY local authorities are busily engaged in erecting well-designed and generously planned secondary and elementary schools, technical colleges and other public buildings, the cost of which will be met by annual payment during the next fifty years. Are they giving anything like the same amount of thought to the quality of the people who will make use of these buildings?

In 1905 a Royal Commission sat to determine the state of the country with regard to mental deficiency; in 1926 a committee—the Wood Committee—gave consideration to the same matter. To the non-expert reader, the statistics published in the two reports testify to a rapid increase of those who are styled mentally deficient and presumably of those who intellectually are next door to them. Even the supercautious writers of the Wood report admit, finally, that the evidence shews some increase in the numbers of the mentally deficient.

Having in mind the early elimination in times past of the poor in mind, body and spirit by natural causes and the pride taken to-day in the conservation of every life however prolific, potentially, of eugenic ills; having in mind, too, the elimination from the ranks of motherhood of those hundreds of thousands of specially selected women who choose to remain unmarried rather than give up their professions, and the teaching of birth control which is readily assimilable by the thoughtful and thrifty but is ignored by those who have nothing to lose by procreating children: having these things in mind there might have appeared a good *prima facie* case for a full enquiry as to how we really do stand to-day with regard to the intelligence of the rising generation.

A first enquiry, on a limited scale, Dr. Cattell has

been able to make through private generosity, and the readiness of the Leicester Education Committee to grant him the necessary leave of absence from his customary duties. If, on the fullest investigation, his findings are substantiated, immediate action is called for.

The first round, at any rate, of "the fight for our National Intelligence," as Dr. Cattell puts it, is won when, on the one hand, all those thousands of women referred to above are allowed the right to marry, a right which, on other grounds, should be denied to no human being and, on the other, some check is put on the multiplication of the eugenically unfit.

It is the function of a Local Education Authority to provide for the educating of children within its area, recognising the ever-widening connotation of the word "education." At the present time highly skilled and very expensive work is being devoted to the "backward" and mentally deficient. Unless the teachers doing this work are particularly skilled, progressive mental contacts will not be made, and unless the classes are small the individual work necessary is impossible. And when all has been done that can be done by a generous Authority and able and enthusiastic teachers, when the functions of these "backward" children's intelligences have been fully exercised, the outcome is not and cannot be citizens able to maintain the dignity and prosperity of the community of which, willy-nilly, they form a part.

Yet there they are, it is maintained, in ever-increasing numbers, and they must be well educated lest worse befall. It is from these in the adolescent or adult stage that the criminal classes, to a considerable extent, are recruited, and though it costs much to educate them in small classes in the ordinary or special schools, it would cost much more to provide for them in reformatories or prisons.

Until recently, education authorities have arranged for the segregation in so-called Special Schools of those certified by authorised persons to be incapable of benefiting by attending the elementary schools. This may

suggest to the general public that these children are many or few according to the "Special" School provision made. In fact, the numbers in Special Schools depend on the organisation within the ordinary elementary schools. It would appear that, since social adaptability and the habit of acting in accordance with standards accepted by the majority are the major issues in the education of the backward, and technical efficiency in classroom activities the minor, provision should be made, if at all possible, for educating in the same schools those who as children play together and as adults work together.

In the matter of the quality of our people, the easy policy of drift and intelligent opportunism is understandable and even excusable until its continuance is seen clearly by those in present control to lead to inevitable disaster. Dr. Cattell's monograph should help towards this clear vision.

F. P. ARMITAGE.

October, 1936.

AUTHOR'S FOREWORD

FOR some years I have been increasingly concerned, as a clinical psychologist, to witness how frequently children of low or feeble-minded intelligence are produced in large and unrestricted families, in contrast to the very limited size of family among intelligent strains. Such a state of affairs is obviously a matter of critical importance to the nation and when the Eugenics Society invited me to make an adequate investigation I felt no hesitation in turning back from the more theoretically interesting problems of psychotherapy in which I had been engaged to this urgent practical matter of mental testing.

It seems to me, nevertheless, something in the nature of a scandal that an enquiry into what is a life and death matter for our national culture should have to be initiated by a private body of scientists, should depend on the unaided efforts of a single investigator and should be limited by a total expenditure of about £250.

I can only hope that my results and conclusion will be submitted as early as possible to confirmation by a competent commission of social psychologists and economists, and that thereafter the Ministry of Health and the Board of Education will not pass the baby to each other too long before deciding whose business it is to look after it. There is an evil to be grappled with, and every year of postponement means a heavy cost to the country.

I speak above of "unaided efforts," and officially they may have been such, but one of the very pleasant experiences of this otherwise rather melancholy investigation has been the way in which a number of very able men have given unstinted help with the problems encountered.

I have to thank Professor R. A. Fisher for continual advice on statistical problems, Professor Burt for the benefit of his experience on mental test surveys, Dr. C. P. Blacker for facilitating all arrangements, and Mr. Colin Clark for discussing with me at length the economic aspects of my suggestions. In the practical arrangements I owe much to the Director of Education and the Committee at Leicester, who released me, at some inconvenience to themselves, from routine work for the period of research. I was greatly assisted also by the courtesy of the head teachers in Leicester and Devon and of the Director of Education for Devon. Last but by no means least I have to thank Mr. J. Willson and Miss E. Charters for much hard work in giving tests and checking calculations.

Of all these co-operations none has been more pleasant or significant than that with Major Leonard Darwin, who patiently read the MS. in its unfinished condition, bringing his experience to bear on many points with great benefit to the final presentation. I am indeed very greatly indebted to him for help and inspiration at all stages of the work.

R. B. CATTELL.

September, 1936.

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CHAPTER I

THE TWILIGHT OF WESTERN CIVILISATION?

IN the path of progress of England and most civilised nations stands a threat, challenging all who have the intelligence to perceive it.

For it is not a menace apparent to all eyes, as are the perils of economic collapse, or cultural and religious confusion, nor is it so easily dramatised as political reaction or war. Yet it strikes insidiously at the very roots of national life and brings all these evils and many more besides in its train. I refer to the approach, foreseen by scientists a generation ago, of a grave decline in the level of national intelligence. To meet and overcome this enemy is the special task of the twentieth century, and if the victory is gained there is little doubt that history will rank it as the most important achievement of Western culture, for no civilisation has achieved it before.

Let us scrutinise the threat more closely and glance at the effects likely to occur if the danger materialises. Certain historians who have recently made their subject a scientific study, an affair of measuring and calculation, tell us that the decline of the early Eastern civilisations, of Greece and of Rome, was primarily due to a biological withering of those strains of the population bearing high mental capacity.¹ To create a civilisation, to let it burst

¹ See Seeck, *Geschichte des Untergangs der Antiken Welt*, Vol. II; Nilsson, *Imperial Rome*; Tarn, *Hellenistic Civilisation*, 1930, p. 91; Fisher, R. A., "The Problem of the Decay of Civilisation," *Eugenics Review*, 1926; Rostovtzeff, *Social and Economic History of the Roman Empire*; Gunther, *The Racial Elements of European History*; Dill, *Roman Society*; and McDougall, *National Welfare and National Decay*.

It is not asserted that the disappearance of ability was the only cause of

forth in flower from a previous state of barbarism, the race concerned must first accumulate a rich crop of men—or rather of family strains—possessed of great natural mental capacity. To maintain a civilisation in good working order it must retain an adequate proportion of these relatively gifted strains.

Under every system of civilisation yet known there has been an ineradicable tendency for the population to be recruited increasingly from the sub-men. If generation after generation they have a birth rate above those of good average intelligence, and if the strains of high intelligence limit their breeding practically to the point of dying out, it does not require long, in historical time, for the quality of the breed to become entirely different. The unhappy country “grows thin on top,” loses first the fine lustre of its genius, then its moral culture and political stability and finally its arts, its material standards of living and “civilisation” itself.

Not one civilisation has yet escaped this sequence and mystics such as Spengler have enshrined the occurrence in the dignity of an inexorable natural (or supernatural) law, pointing with blood-curdling cries of doom to the omens in our own midst which foreshadow the “Decline of the West” decreed by destiny. But the temper of the scientist—of the psychologist and biologist looking at social problems—inclines him to regard it as a natural disease which, if the scientist is given a chance, may yet be understood and mastered.

Nor did human progress suffer permanent defeat as a result of these shipwrecks in eras when civilisations were small centres of light in a sea of barbarism, though doubtless the situation was desperate and forlorn enough to those who saw all that they valued sinking into night.

collapse. There were obvious economic and military causes. But I think the social psychologist to-day would consider many of these other factors as derived from alterations in the distribution of mental capacity, just as he would consider the latter to arise from social customs and ideals. Nor does one suppose that history exactly repeated itself in each decline. To-day, for example, the decline of mental capacity would have far more devastating results than in previous civilisations.

In the surrounding masses of barbarians, the ancient law of the survival of the fittest constantly accumulated, through blood and agony, a preponderance of survivors having quick intelligence and determined foresight. These broke in upon the decrepit civilisation and, if they were minded to pick up the social heritage at the point where it had dropped from the nerveless fingers of its former keepers, generally cultivated it into blossoming with fresh vigour.¹

But when the lingering death of civilisation is likely to stretch across the whole world and no gifted outsiders are left anywhere to put it out of its misery, the menace of decline assumes a more forbidding aspect. It is a case of internal cure or nothing. Consequently, to men of ideals and determination—indeed, to all who value the slow-built heritage of civilisation—no social, political or religious problem calls so urgently for attention as this one. It requires action and thought on unprecedented lines, directed to discovering and righting that hitherto-ignored error in the construction of civilisation which condemns it to a perpetual and futile cycle of breakdowns and frustrations.

Western civilisation, it is true, has had an unbroken run of some six hundred years of reasonably active intellectual and social life. It wears still, save for a few disconcerting symptoms, an air of serene or optimistic progressiveness, in this respect achieving something of a record.² A careful sociological analysis would probably shew³ that owing to a fortunate coincidence of property customs, migration, the incidence of disease and recruiting for war, blind spots in Christian practice, etc., the survival rate of the more able has been about

¹ e.g. Flinders Petrie in his study of the civilisation of Egypt, *The Revolutions of Civilisation*, observes "in every case the rise which followed the fall was preceded by the incursion of a new race."

² Perhaps the record for the most protracted cycle belongs to China, and it is interesting to connect this fact with the religious obligation to beget children, an obligation which would fasten itself most on the better types. Even so, carelessness in the long run seems to have beaten religion.

³ See, for example, Carr Saunders, *The Population Problem*.

the same as that of the less gifted over most of this period. Even two generations ago when Francis Galton first drew attention to the extent of inheritance of mental and physical traits and began to examine birth rates—thereby founding the science of eugenics—there was no convincing evidence of anything but a happy state of affairs in the nation's breeding of intelligence.

It is only in the last thirty years that a number of signs discernible to the sociologist have pointed to the grim conclusion that we have entered on a phase in which low-grade mentality is reproducing itself with unhindered prolificness, whilst families of more than average intelligence are failing even to maintain their numbers. Unfortunately this evidence, which I have discussed in connection with other problems of social psychology elsewhere,⁵ is of too oblique and inferential

⁵ Chap. III, *Psychology and Social Progress*, C. W. Daniel Co. There are three chief sources of indirect evidence. (1) The increase in mental defect, from 0.46 to 0.84 per cent, between 1905 and 1927, discussed in the Wood and Brock Reports. (Report of the Mental Deficiency Committee, Part IV, by Dr. E. O. Lewis, p. 82.) (2) The persistence of a marked differential birth rate.* Thus in 1921 the births per 1,000 married men under 55 were: upper and middle class 98, skilled workmen 134, unskilled workmen 178. (E. Charles, *The Twilight of Parenthood*.) In the Merseyside survey non-manual workers averaged less than 3 children, skilled artisans 4, unskilled manual workers 5½, whilst the unemployed exceeded this figure, having 30.3 per cent of families with 6 or more children as against 20 per cent of such families among employed. (Caradog Jones, "Eugenic Aspects of the Merseyside Survey," *Eugenics Review*, July 1936.)

* This difference was definitely greater in 1910 than in 1900, for Kiser found that whereas the birth rate of the upper classes had declined further during the interval, that of the lowest class was unaltered. The order he found in the groups dealt with was: from smallest to largest birth rates; professional classes, business men, skilled workers, unskilled workers, farm owners, farm renters, farm labourers. ("Trends in the fertility of Social Classes from 1900 to 1910," *Human Biology*, 1933, V T. Stevenson, "Fertility of Various Social Classes in England and Wales," *J. Royal Stat. Soc.*, 1920.) It is known that there is a significant stratification of constitutional mental capacity according to occupation and social class (see, for example, R. B. Cattell, "Occupational Levels of Intelligence," *Brit. J. Psychol.*, 1934, and "An Investigation of the Relation between Inheritance and Intelligence," E. Lawrence, *Brit. J. Psychol. Monog. Suppl.*). Consequently unless there is some marked tendency for the more intelligent in each occupation to be the more fertile, there must be a fall of average I.Q. If the evolution of intelligence were at all in a healthy state one would not need to have to search in such an obscure backwash for evidence of some favourable movement. (3) The common observation of clinical psychologists that the dull and borderline feeble-minded generally reproduce in large families.^a

^a One typical survey of the family sizes, etc., of inmates of a mental defective institu-

a nature for its convincingness to be grasped by those not at home in the statistical analysis of social problems. Rhetoricians can blur its outlines with a word and anyone with strong political prejudices can ride roughshod over its delicate mosaic of reasoning. If right-thinking men and women are to be united in a course of action, therefore, it is urgently necessary to uncover direct evidence, proving up to the hilt and beyond emotional disputation the state of affairs that actually exists.

For my part, having observed in clinical work for some years that the almost feeble minded are constantly being produced in large families, whereas the able and the brilliant scholarship children are more often in meagre families of ones and twos, I have become concerned and curious to know how far this is happening on a larger scale. It is safe to say that every clinical psychologist knows, with the conviction of a 100 to 1 probability, that national intelligence is falling disastrously at the present moment through the continual rapid replacement of the constitutionally bright by innately dull and limited types.

Of this grave possibility the general public is either blissfully ignorant or frivolously sceptical. This powerlessness to save itself springs from an utter ignorance of biological principles and an arrogant intellectual timidity which are the consummation of the traditional education to which our ruling classes were subjected in the last generation. The unfortunate mental equipment of most leisured people seems to be such that when faced by this, or any other of the intricate and fascinating social problems of to-day, they run to bury their heads in a game of bridge, as if their sanity depended on it. Our journalists seem to have been taught that news and drama lie in the dreary repetitions of petty crime rather than in the adventure of the whole community fighting with its back to the wall against a danger so fundamental as this.

tion concludes by observing, "If the grandmothers of the feeble-minded group had stopped after bearing their second child, only one in twelve of these unfortunates would have been born." (R. B. Newell, "Sizes of Families and Abilities of Children," *Eug. News*, 1933.)

According to their infantile interpretation presumably such an able spokesman as Dean Inge holds gloomy views because he considers a theatrical gloom is becoming to a dean. Last but not least in this crime against the community I must pillory my friends the eugenists, who should be alarming the country regarding the only thing worth getting alarmed about, but who have such traditions of gentlemanly reserve and such horror of publicity that they would not shout to a man about to light his cigarette above a powder barrel.

Before passing on to my own investigation I should like to make it clear that I am not obsessed with the notion that the raising or preserving of the level of inherited intelligence is the only need of society and the only requirement in the production of a fine type of citizen. Inheritable factors in physique are perhaps equally important, yet we are no less in the dark concerning what is happening to them. A sagacious government would long since have consulted medical opinion regarding the hereditary factors in determining health, longevity, stature, good eyesight and hearing and resistance to disease generally, and would have conducted surveys to see how these factors are altering our national breed at the present time.

I shall confine myself to the question of intelligence, or mental capacity, both because of its widespread interaction with all that we value in life and civilisation and because the psychology of mental testing has reached a stage when it can be profitably investigated. I shall describe the results of giving intelligence tests to large numbers of families with the object of finding out whether the relatively intelligent or the relatively unintelligent are reproducing themselves in greater numbers at the present day. We shall be able to see the family as it lives in an industrial city to-day and as it responds to the present conditions of village life and, by combining these two pictures, discover what is happening in the country as a whole with regard to family life and influences affecting the birth rate.

If the state of affairs revealed by this direct and sufficiently large-scale investigation proves to be as bad as the signs suggest, we must then pass to the consideration of remedies appropriate to the urgency of the situation.

I must ask the general reader to bear patiently with the technical details of the planning and progress of the research and the statistical treatment of results now to be presented. All matters of secondary importance, or elaborations of technical issues, will be dealt with in a series of footnotes.

CHAPTER II

INQUEST ON NATIONAL INTELLIGENCE LEVELS

I. INTELLIGENCE MEASURED IN TYPICAL RURAL AND URBAN POPULATIONS

THE facts we require might at first sight be most simply obtained by applying psychological tests of constitutional mental capacity to some sample thousands of our adult population, including in representative measure earls and electricians, tinkers and tailors, waitresses and watchmen. After grading this population in a convenient number of groups in ascending order of intelligence we could work out the average number of children per adult produced by each group and, providing further testing shews that the children of these groups are in the same order of intelligence as the parents, derive figures to shew the rate at which the national capital of mental capacity is increasing or decreasing.

In principle this is what we did, but the simplest and most direct plan was not deemed desirable because (1) It is unduly time consuming to collect a large number of adults, especially in proportions representative of the general population. (2) Mental tests so far developed to a practical stage are not so accurate with adults as with children. An unknown age variation has to be allowed for and environmental effects through prolonged investment of interest in one occupation may exist. (3) Children, on the other hand, are not so test shy, are in a uniform school environment and are used to expressing their abilities in examinations or intelligence tests.

Consequently we set out to sample the family, as it were, at the child end of it.¹

¹ The only disadvantage of this proceeding is that we miss out of our calculation all the people who are celibate or childless. From the point of view

In order to cover as many families as possible only one child was tested from each, this child being taken as a sample of his brothers and sisters;¹ and in order to effect a complete sampling of the population, from which no particular group might escape, we took all the children in the area born in a certain year.

A convenient age to take is ten years, since children are not so scattered in different schools at that age as later and since they are old enough already to have examination experience and familiarity with intelligence tests at eight and nine.

Our next concern was a geographical one: we had to get typical samples of English population without dissipating available time in too many areas. We therefore chose one typical industrial city with a population of 239,000 inhabitants and one unspoilt rural area of twenty scattered villages and townlets varying in population from 300 to 6,000 people.

In these areas we tested all the ten-year-old children with the same specially designed non-verbal intelligence

of maintaining the national average it is no use the families in the intelligent group being large, if a large number of adults in that group remain childless: for the size of the group will diminish from generation to generation. The frequency with which reproduction takes place, i.e. the length of time between generations, must also be taken into account.

¹ Apart from the slight effect due to the well-known "regression to the average" the average figure for the brothers and sisters of say one hundred children tested would be the same (save for slight "sampling error") as that for these children themselves, since the brothers and sisters are likely to scatter equally above and below the representative.

The correlation of intelligence of brothers and sisters is well known (giving a coefficient of about 0.5). To those who think from casual observations that the intelligence of children in one family normally varies greatly I would point to an illusion which causes error in this and many related fields. The individual gets his idea of "average" from his own family, friends and social class. Few people realise to what extent they do this or how narrow their field is compared with the ranges of mental capacity in the population as a whole. A man's social environment is always well sifted. At school he is classified with similar people, first by the nature of the school itself, then by class sorting. The same occurs in occupations, except in special instances. Few people have attempted to converse with an Einstein and the imbeciles in a defective institution on the same day. Unaware of the heights above them and the depths below, most people magnify the individual difference of members of families and groups which they know.

test. Records were kept of parental occupations and the number of (surviving) children in each family sampled. A full, detailed account of how the sampling was made representative is given in a footnote.¹ Our survey,

¹ METHOD OF SAMPLING POPULATION

Since the greater part of English population is in large towns or cities our urban group was larger than the rural group, according to the same ratio (approximately) as that existing for the country as a whole (31 millions urban, 8 millions rural).

1. *City Group*.—London is scarcely typical of English urban life. Our results were gathered in a city, Leicester, which strikes an average in tone between London and the industrial cities of the Midlands and North. Surveys of intelligence are made regularly in this city, so that the machinery for gathering the results already existed.

But in this and the rural area we had to find where the ten-year-old children go to school. In Leicester we considered we had covered the great majority of the children in the city area proper by taking all the following schools:

	<i>No. of Cases.</i>
Special school and special classes for the dull and defective	49
All elementary schools (24 schools)	2,245
2 preparatory schools (for secondary schools)	141
2 private schools	264
1 public school*	174
Total	<u>2,873</u>

2. *Rural Group*.—The secondary preparatory school and private school facilities are here greatly decreased and in the small villages practically every child was in the village school. We added three secondary schools (correcting families to ten years of age) to give an adequate proportion of the children who are sent away to school.

Our rural group consisted of:

	<i>No. of Cases.</i>
22 elementary schools in 22 villages or townlets	758
3 secondary schools in country towns drawing on the countryside	103
Total	<u>861</u>

This gives a ratio of elementary to non-elementary of 7.5 : 1 for the country as against 4 : 1 for the city.

For the rural sample Devonshire was chosen as offering typical unspoilt conditions. The villages and townlets explored were (1) in the fertile South Hams farming area, south of Dartmoor and clear of big towns and railways; (2) to a lesser extent the less-favoured area on the northern edge of Dartmoor, with an extension in one instance to Launceston.

For reference to * see page 11.

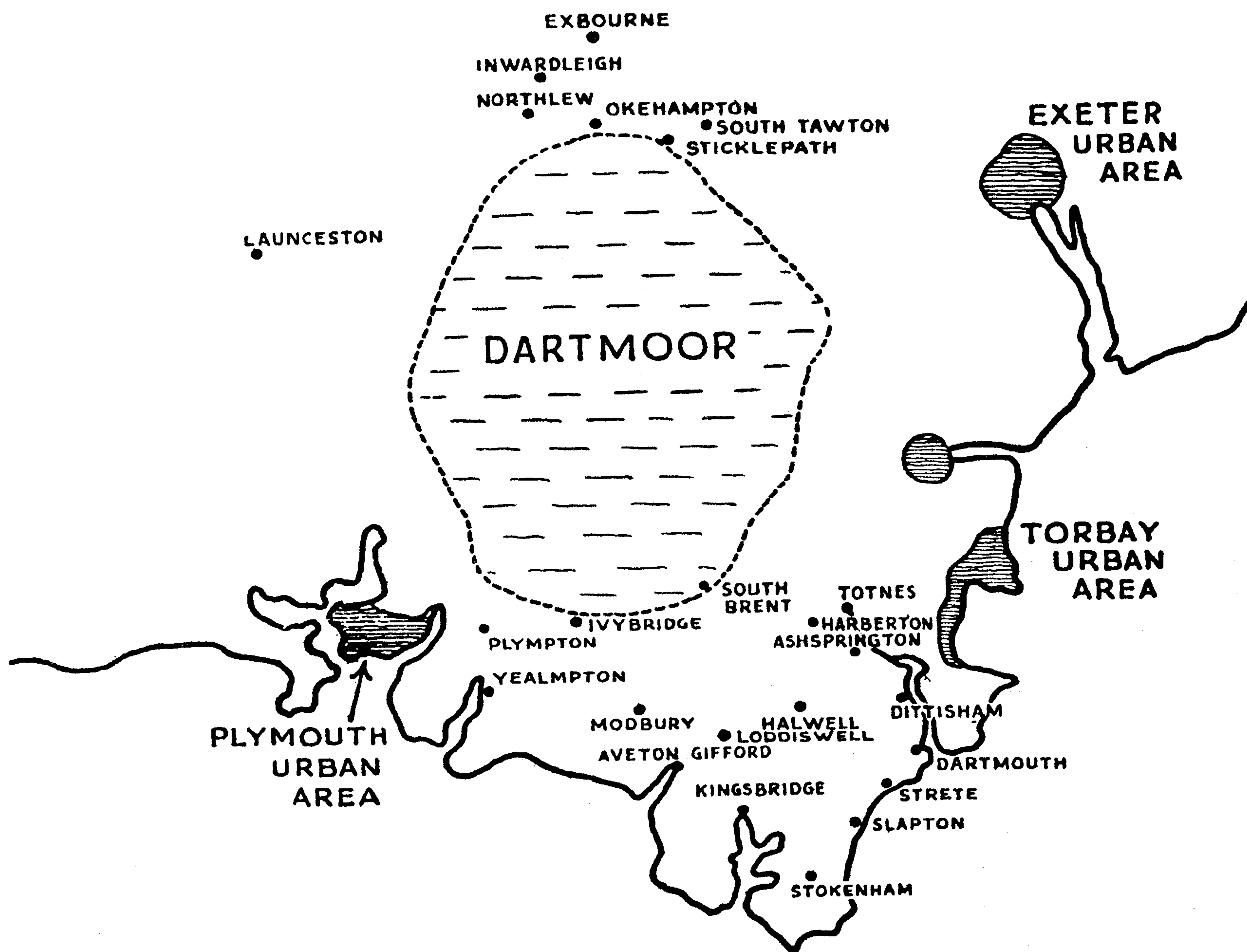
covering 3,734 families, was thus rather more than half the size of the well-known Merseyside survey.

Though at first sight it may not seem a highly relevant matter, we will consider, in passing, the actual distribution of intelligence in city and country, as shewn in diagrams Ia and Ib. Both figures reveal the "normal" type of curve which psychologists have come to expect

* This was one of the original public schools, taking the children of the very well-to-do in this area. The boys were naturally not at ten years of age as were the others, but we included them because it would have been very difficult to get hold of the children of this social group at ten years: they are then so scattered. Of course, the size of family was made accurately comparable by recording the number of children in the family when the child tested was ten years old. In this group too, since we were not able to test as many children as we needed to give this class its due proportion, each child was weighted to count as two.

The actual villages and small towns included are shewn in the map below.

VILLAGES AND SMALL TOWNS IN RURAL AREA



in such surveys,¹ but the country group is shifted as a whole towards the lower grades, and both shew a skewedness of the peak towards the lower end. This skewed-

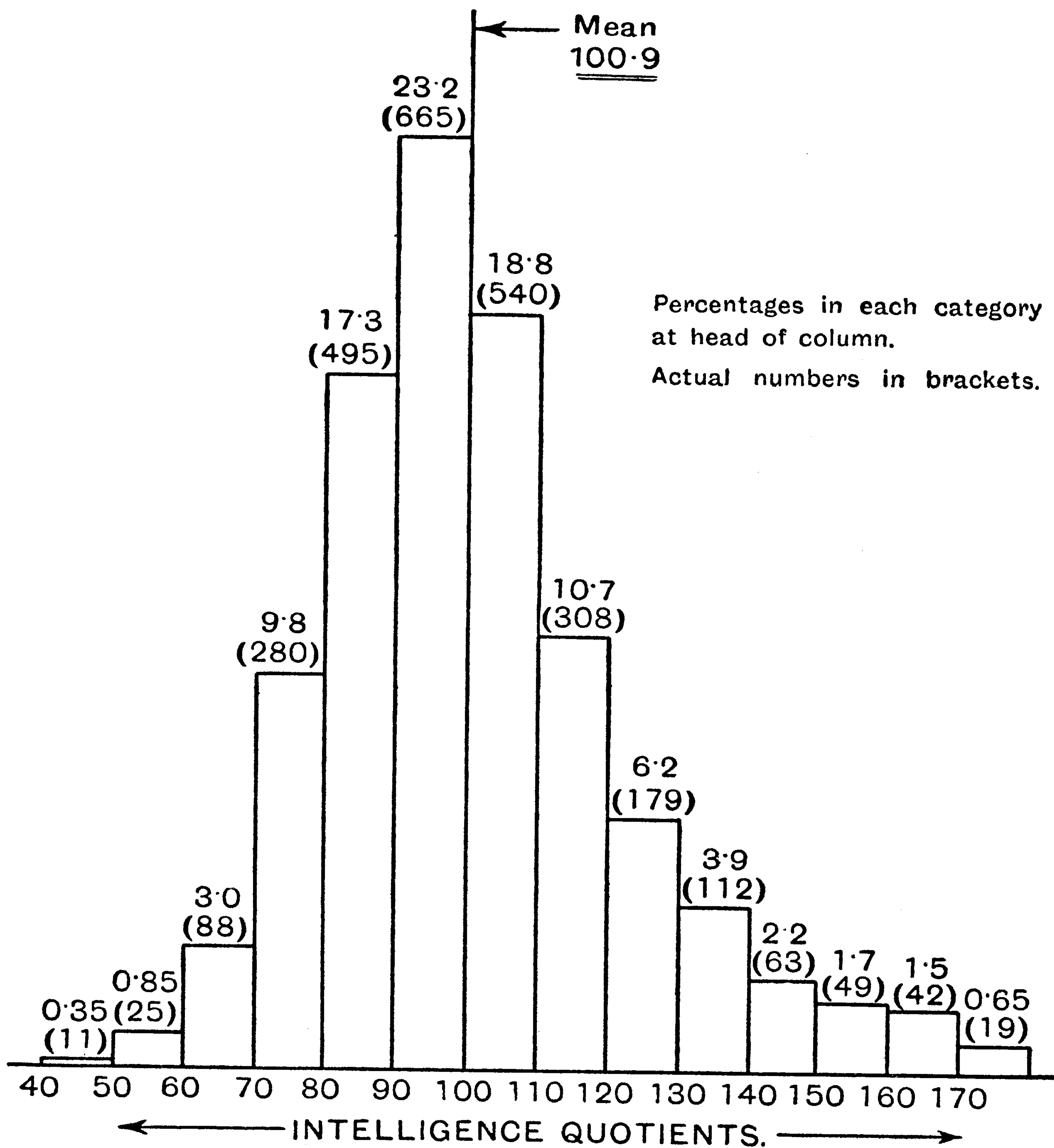


DIAGRAM Ia.—Distribution of Intelligence in the Urban Area.

¹ The "standard deviation" of these distributions is for town and country respectively 21.9 and 36.9. This betokens a rather greater scatter and variability than has been found in early surveys in America and elsewhere, but confirms the results of the Scottish survey and my own surveys in this country. (*Brit. J. Psychol.*, Vol. X, 1933; *Forum of Education*, 1928.) The deficient scatter of the American results (e.g. those of Terman) may be partly due to a real absence of extremes in the population, but, as I have argued elsewhere (*Brit. J. Psychol.*, Vol. X, 1933), it is more probably due to the use of defective

ness could arise from a differential birth rate acting upon an originally symmetrical curve under conditions of

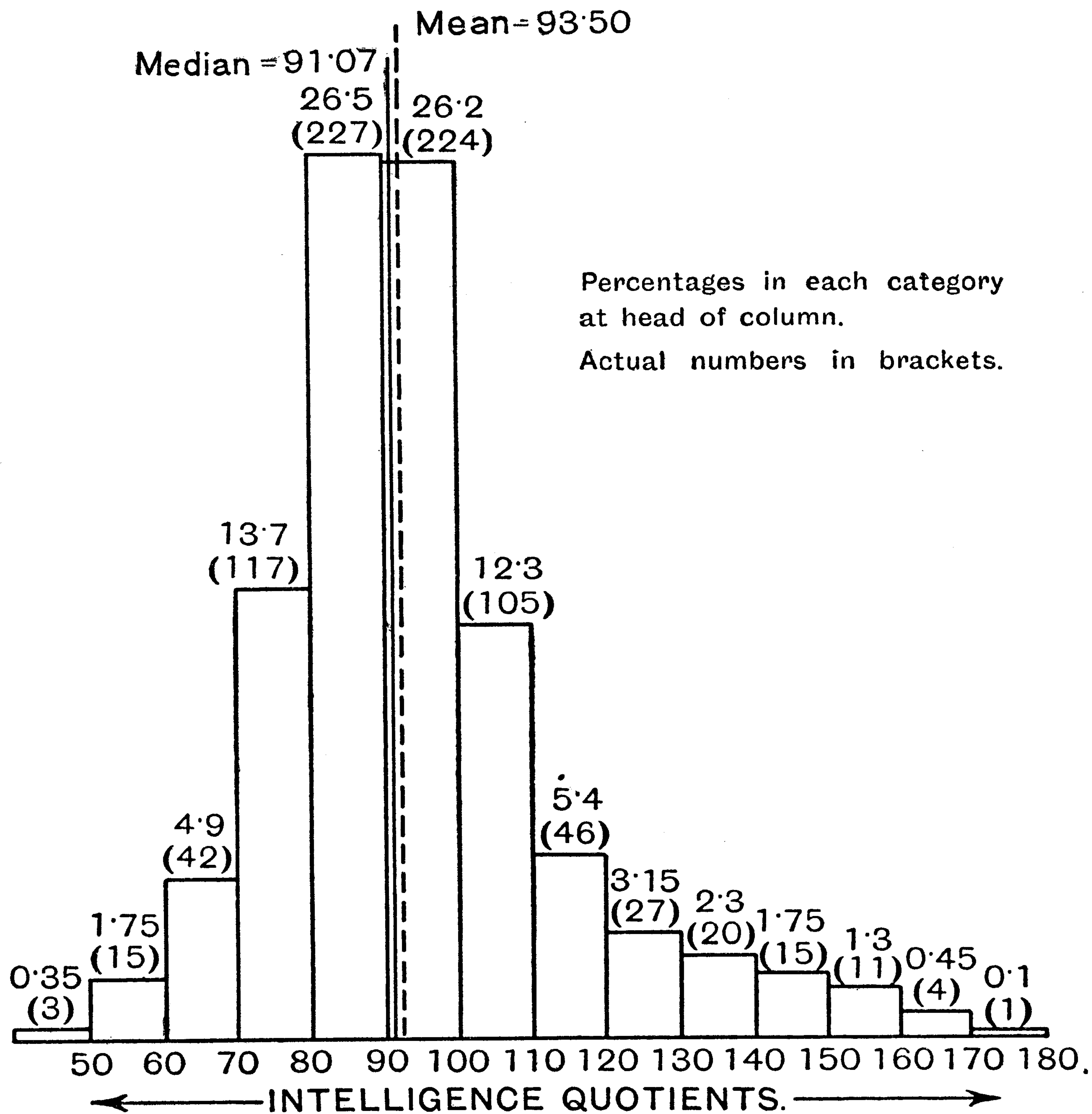


DIAGRAM Ib.—Distribution of Intelligence in the Rural Area.

“assortative” mating (i.e. inbreeding in each class) and occurring at too rapid a rate for the curve to readjust

tests measuring attainment along with intelligence. Owing to class-teaching methods, which concentrate on the laggards and the dull, whilst allowing the bright to mark time; and owing to the fact that the life experience of a child of eight is less than that of a ten-year-old with a mental age of eight, an intelligence test contaminated with education and experience will give the impression that the scatter of I.Q.'s is less than it actually is. For that reason I suggest that the greater deviation found in the present survey is at once a closer

itself by diffusion (intermarriage) (see Diagrams IIIa and IIIb for curve in last generation).

This finding of a slightly lower average intelligence for the rural population is also repeating results already familiar in this country and America.¹

All considerations indicate that the rural poverty of intelligence is due to a greater readiness of the more intelligent families to migrate to the towns. As one such migrant told me, he had moved away from "small-town life, small wages and small opportunities." This higher average intelligence of the city is mainly of interest in illustrating the important sociological principle that, other things being equal, the more gifted biological strains will in time be found where the more attractive conditions exist and vice versa.²

approach to the truth about mental variability and an indication that the tests are relatively clear of environmental (reproductive) elements. This fact should be noted in connection with later comments (p. 28) concerning the early studies of alleged environmental influence on the intelligence of twins.

¹ *Note on Difference of Urban and Rural Intelligence.*—What is perhaps the most thorough of American surveys (Jones, H. E., *et al.*, 1932, "Environmental Handicap in Mental Test Performance," *Univ. Calif. Public. Psychol.*, 5) shews ten points of I.Q. superiority in the town and concludes "about half of the average difference of ten points I.Q. is attributable to factors other than those derived from the social and educational environment." With the more recent tests used here the effect of environment would not be so great, indeed it would be generous to allot two points to it, and that because of the accidental circumstance that the town group was already familiar with intelligence tests. For it is a naïve supposition that the town environment is more favourable to the development of intelligence. This allowance for town familiarity with tests would give a difference of town and country of five points, which is in agreement with the eventual conclusion on the American results.

As is well known, town children are also superior in general physique, stature, etc. This aligns itself with the fact that positive correlation (of a low order) exists between good intelligence and good physique and points to the conclusion that the town's advantages attract a superior biological sample of the population, though (as I have pointed out in *Psychology and Social Progress*) the city tends to sterilise and kill the very qualities which it attracts. The country continually supplies the cities with its better men, but the cities do not maintain them. (In this survey, for instance, the average birth rate in the country was 3.62, in the city 3.36—an indication dysgenic in itself.) Consequently, the cities will move towards the present intelligence level of the country.

² *Note on Regional Prosperity and Regional Intelligence.*—I have been much impressed in this survey by the differences of intelligence between one village

The process deserves to be brought into the limelight, for the layman's first reaction is otherwise always blithely to assume that the good conditions directly produce the better biological strains (as bad air was once thought to produce malaria).

and another. Likewise, one cannot read widely in the literature of intelligence test surveys without becoming convinced that marked regional differences exist even within the same country and race.

The character of the village itself, its cleanliness, the planfulness of its buildings and the level of its prosperity were often strikingly related to the level of intelligence found. In nearly every case an estimate of intelligence made on the appearance of the children and their enterprise in work and play was found to anticipate the independent test results. Dr. Allan Price, who has carried out intelligence test surveys in most villages which fall under his supervision as a Medical Officer of Health, tells me that he is convinced there would be a high correlation between the prosperity of a village, its freedom from preventable ill-health, and the level of inborn mental capacity.

At any rate this contention that average mental capacity in the long run determines the prosperity of a group is one which deserves thorough investigation, and one which could well be tackled experimentally by some refinement of the plan of comparing villages for intelligence, income per head, incidence of preventable disease, etc. (See research in New York, p. 84.) In relatively small villages an unusual level of intelligence was often obviously due to the effect of one or two families, the inbreeding of good families producing good intelligence and of defectives even more defectives. An excess of low intelligence was almost invariably found in small towns of great age which had been important and prosperous in the Middle Ages. It is as if old cities, like old fires, accumulate much ash.

The study of such connections is of great importance to the population planning of the country as a whole and also with regard to the growing tendency deliberately to shift population about the country in a wholesale fashion, e.g. from depressed to prosperous areas, for in some cases the disease (of low intelligence, prolificness and poverty) may be transmitted with the people.

Basing my conclusions partly on proven results and partly on indications known to research students I should describe the regional distribution of intelligence in Great Britain roughly as follows. It is in general higher in towns than country villages, but in very remote villages never tapped by the towns it is a little higher than in the towns. It is higher in Scotland than in England, but the Scottish towns are lowered by Edinburgh and especially Glasgow which has had a big influx of Mediterranean Irish. East Anglia and the home counties are probably slightly higher than the rest of England (excepting Yorkshire), whilst Greater London itself may well be as much as three points higher than the rest of England.

I mention these indications not only because they are of general interest, but because they suggest that the standardisation of the present non-verbal test, which shews rural Devonshire as distinctly below average and a Midland manufacturing city as a shade below average, is about correct in level for the composite population of Great Britain as a whole when London and Scotland

2. SIZES OF FAMILY FOUND AT VARIOUS INTELLIGENCE LEVELS

A variety of strange and interesting facts of this kind is generally hauled to the surface when the net of a psychological survey is cast, but, after all, we are most eagerly concerned with the main catch—the facts regarding birth rates and intelligence—and to this we will now turn.

Diagrams II*a* and II*b* shew, respectively for town and country populations, the rate at which our population is being recruited from various intelligence levels at the present day. A glance suffices to shew that in both regions the trend of intelligence must be disastrously downhill; for, apart from a slight rally in the upper levels of the city (discussed later, p. 123), the more intelligent are at every level reproduced in smaller families than the less intelligent.

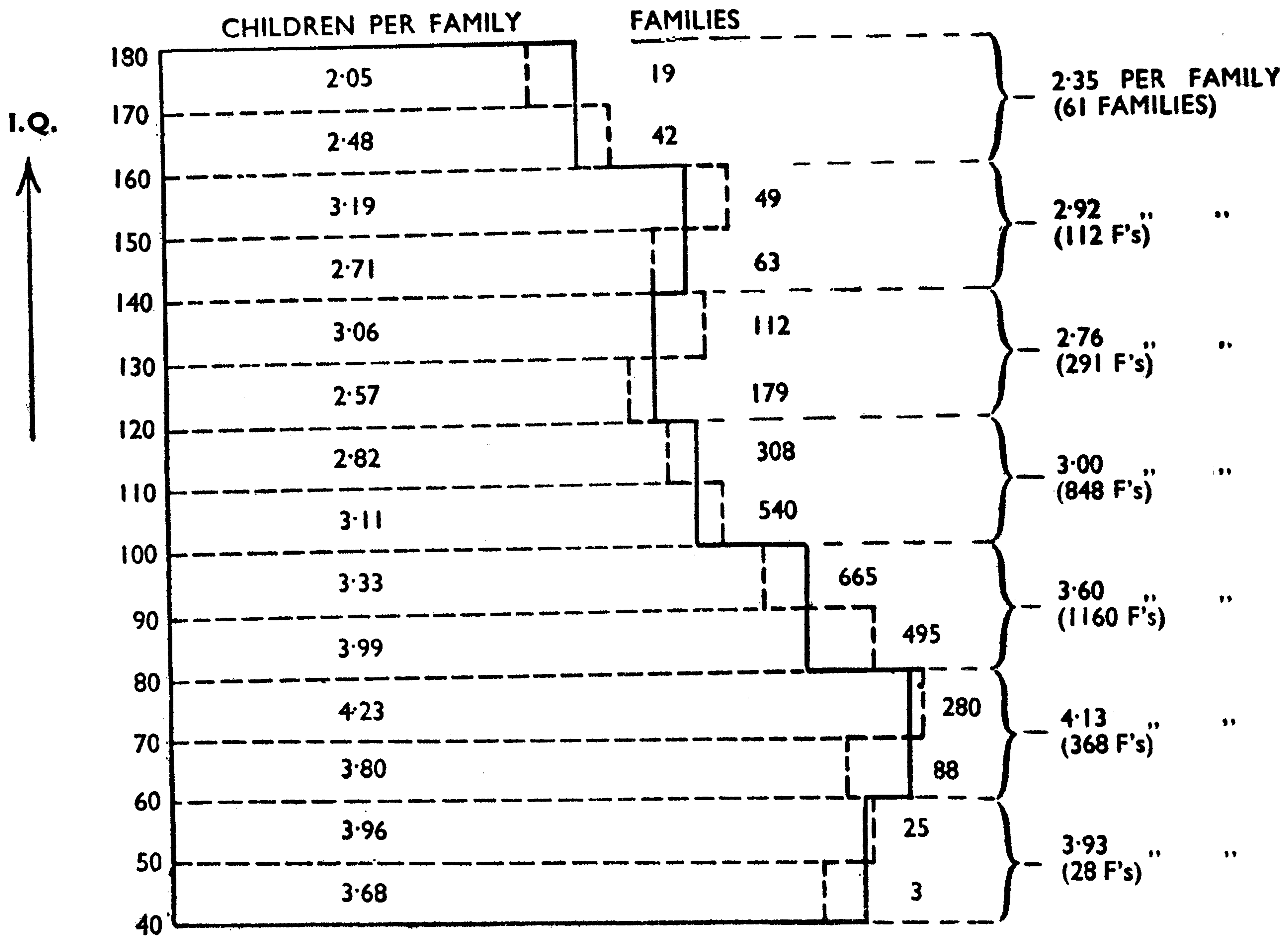
The grim evidence runs with relentless consistency from top to bottom of these diagrams. For a dysgenic trend we were prepared, though not on this scale and not of so uniform a nature (it was reasonable to expect, for instance, that among the highly intelligent the birth rate would rise again¹), but there is no redeeming feature to the situation. In these figures we see the veritable writing on the wall, which should call to its senses any nation with a spark of purpose still left.

are included: i.e. the I.Q.'s which it gives have meaning in relation to "the average dweller in Great Britain."

It is of interest to get away from mere averages: a comparison of the two histogram outlines above shews a marked preponderance of mental defectives and borderline mental defectives in the rural area, a result in agreement with the Wood Report of 1929 which found 10·49 per thousand of the rural population defective and only 6·71 per thousand of the urban population. Neurotic conditions and insanity, on the other hand, are more common in the towns, a result in accord with the statement that they are more environmental in origin.

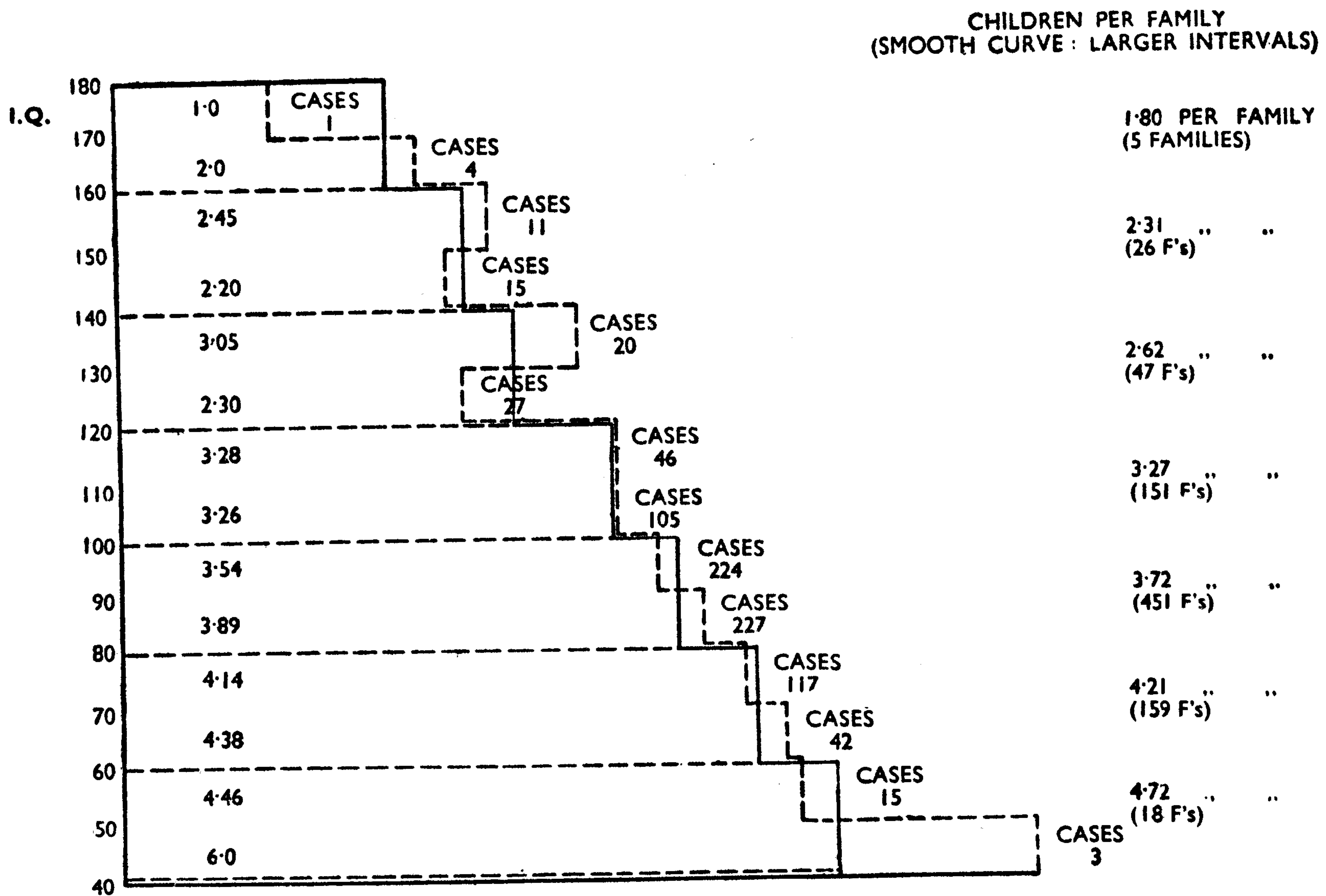
The shape of the histogram for the country is as if a slice had been taken from the middling-upper intelligence section, where we should expect a deficiency if there is selective migration to the towns. It is interesting to notice that Thomson ("The Northumberland Mental Tests," *Brit. J. Psychol.*, Vol. XII) found a good, normal level of intelligence in villages too remote from towns to be much affected by migration. A Devonshire farmer tells me that in spite of unemployment he has to advertise farming jobs in the most attractive terms, adding "two minutes from nearest bus route to city" if he is to get a workman.

¹ See p. 123.



MEAN SIZE OF FAMILY IN URBAN AREA = 3.36

DIAGRAM IIa.—Urban Area: Size of Family and Intelligence Quotient.



MEAN SIZE OF FAMILY IN (RURAL DEVON) AREA = 3.63

DIAGRAM IIb.—Rural Area: Size of Family and Intelligence Quotient.

CHAPTER III

INTELLIGENCE PRODUCED BY ENVIRONMENT OR BREEDING?

I. PSYCHOLOGICAL RESEARCHES REGARDING THE NATURE AND THE MEASUREMENT OF INTELLIGENCE

FACED with an obstinate and unpleasant fact it is in the nature of the human mind to turn away, to forget it, to refuse to see it, to rationalise, to invent a pleasant delusion, to attack those who call attention to it, and so on. One confidently expects, therefore, far more determined attempts to find loopholes in this evidence than would be made if it were of a gratifying nature. Lest the value of thorough discussion from all angles should be lost through dissipation on points which the psychologist has already examined, I will anticipate the more obvious objections; for doing so will provide an opportunity to set down the psychological facts regarding mental ability, without which all further interpretations and deductions from the above analysis of intelligence and birth rates would be astray. (The psychologist is advised to skip this and to proceed to the end of the present chapter.)

Questions may be asked as to how intelligence is measured, in what terms it may be expressed and how far it responds to training. Assertions may be made that the above effect is due to nutritional differences,¹

¹ Thus even a very recent and valuable contribution to education (*Full Stature*, H. G. Stead), discussing the increase of mental deficiency, says with apparent authority, "these I.Q.'s may be affected by a variety of factors . . . emotional disturbances, overstrain and malnourishment are the most important."

I shall examine later (p. 27) the full and direct psychological evidence, which shews that wide variations of nutrition and malnutrition which exist or might exist leave mental capacity scarcely affected. Here I will mention only evidence applicable to the variations actually existing to-day, namely, that if larger families are responsible for such falls of nutrition level as would

since on the whole larger families will not be so well fed as smaller ones, or that the environment of a small family is more conducive to the development of intelligence, and so on. Those statistically inclined may discuss whether the sampling has been adequate, what the effects of celibacy rates may be, etc.

To be brief it may be necessary to be seemingly dogmatic.

Meaning of "Intelligence."—The popular usage of the term intelligence has so many meanings that ultimately it has no meaning at all. As far as possible I shall use the term "mental capacity" and shall mean thereby "mother wit," natural capacity to understand complexities and grasp ideas, constitutional ability independent of specialised education and training.

Many years of research, in which the relations of all kinds of human abilities and mental operations have been studied, shew that such a general ability exists. This mental capacity has been labelled non-committally, by most English psychologists, "G." The amount of

affect intelligence the later born children would not, on an average, be so intelligent as the first born. We should expect a falling off of intelligence in passing from the first to later birth ranks. Actually the most thorough surveys shew again and again that no position in birth rank is more favourable for intelligence than another. (Except at the end of long families, when Mongolian Imbeciles are more likely to occur—see *Mental Defect*, Penrose—but this is not a matter of environment after birth.) For a summary of this evidence see Kinser, E. L., "Intelligence as Affected by Birth Order," *Psychol. Bull.*, 1933, No. 30.

The same problem of environmental influence can be tackled by finding whether siblings born near together are more alike than those separated by many years and by intermediate births. The answer is once more that resemblance in I.Q. is unaffected by distance in time and consequent difference in family conditions. For summary of his own recent researches and other work see F. H. Finch, "A Study of the Relation of Age Interval to the Degree of Resemblance of, Siblings in Intelligence," *Psychol. Bull.*, 1933, No. 30.

It is also relevant to ask whether malnutrition is in fact a serious factor in the main body of the population from which the intelligence differences with which we are concerned are gathered. The L.C.C. Medical Officer's Report for 1935 states that over 94 per cent of the children examined (in elementary schools, etc.) shewed normal nutrition or were even exceptionally well nourished, 5½ per cent were undernourished and of these only 0.08 per cent shewed pathological malnutrition (starvation conditions).

“G” with which a person is endowed is partly responsible for the degree of success he achieves in practically anything, but it is almost wholly responsible for the limits of his success in such things as deductive reasoning, power of choosing words correctly in a known vocabulary, mathematical insight, quickness in picking up ideas and in learning generally, especially where abstract notions and complicated relationships are involved. This ability grows very rapidly during the early years of childhood, then more slowly and finally ceases to develop after about 15 or 16 years of age.

Means of Measuring Intelligence.—Except when all the people to be tested have been exposed to and been equally interested in a similar education and environment, it is necessary to take great care in test designing to couch the problems in terms equally familiar to all, i.e. to work within a “least common denominator” of general experience. The test used in this survey avoided the manipulation of words altogether, since widely different vocabularies may exist in different homes. Its pictorial and “shape” items were also such as to give equal opportunity to differing social groups and to town or country children. Like most recent tests it is composed of varieties of tests which have been proved to correlate highly with “G,” has serried, graded items and selective rather than inventive answers.¹

Units of Intelligence.—Measurement by an intelligence test is first in terms of “mental age”—a mental age of eleven, for example, is credited to anyone who just achieves the score of the typical, average child of eleven on that test. Since it is most desirable to be able to compare the brightness of people of different actual (chronological) age, most intelligence measurements are finally expressed in “intelligence quotients,” obtained by

¹ *Note on Nature of Test used.*—I have discussed elsewhere and in detail the construction of mental tests in general (see *A Guide to Mental Testing*, 1936, University of London Press). The standardisation of the present test is described in “Standardisation of Two Intelligence Tests for Children,” *Brit. J. Psychol.*, Jan. 1936.

eliminating the actual age through dividing the mental age by actual age, thus:

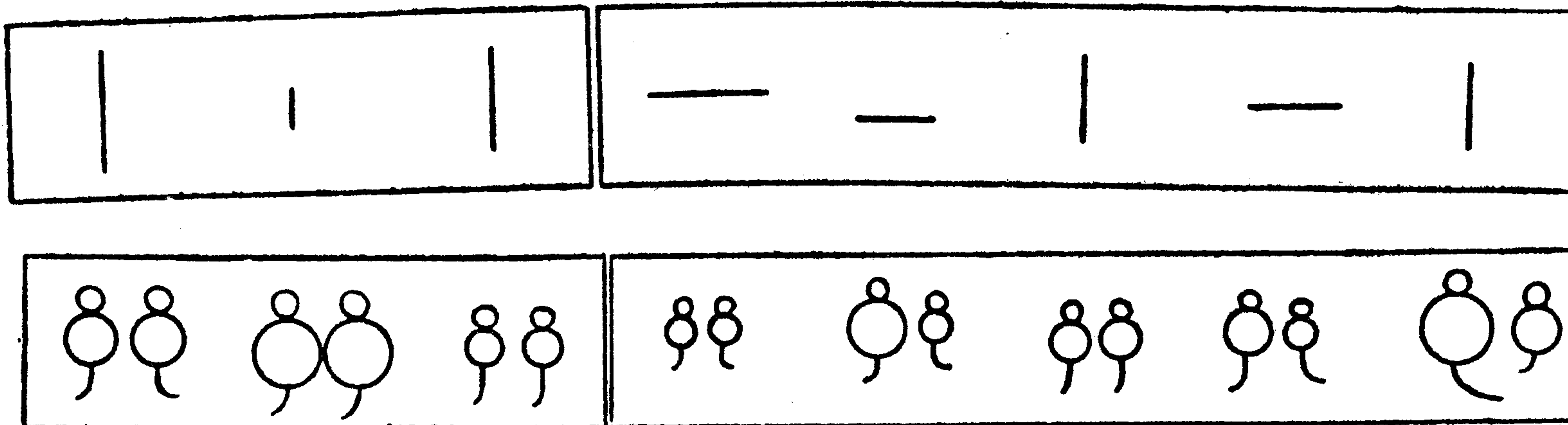
$$\text{Intelligence Quotient (I.Q.)} = \frac{\text{Mental Age}}{\text{Actual Age}} \times 100$$

(The 100 being introduced to avoid fractions.)

The following examples from the test will illustrate its substance.

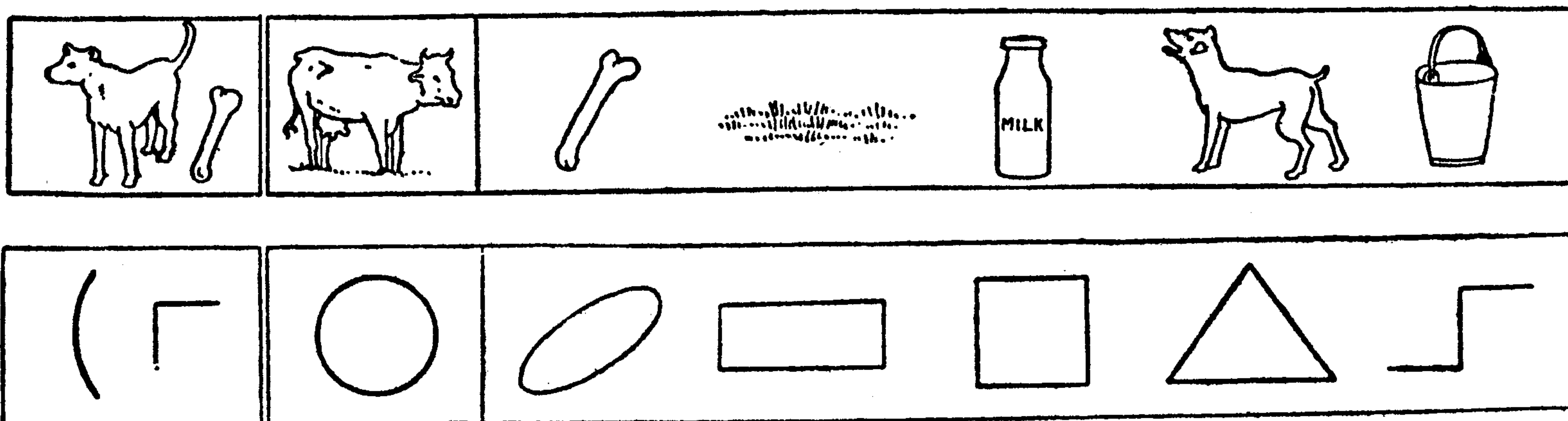
Classification Principle.—Instruction to pick out two items in the “box” on the right that belong to the same family as those in the “box” on the left.

(a)



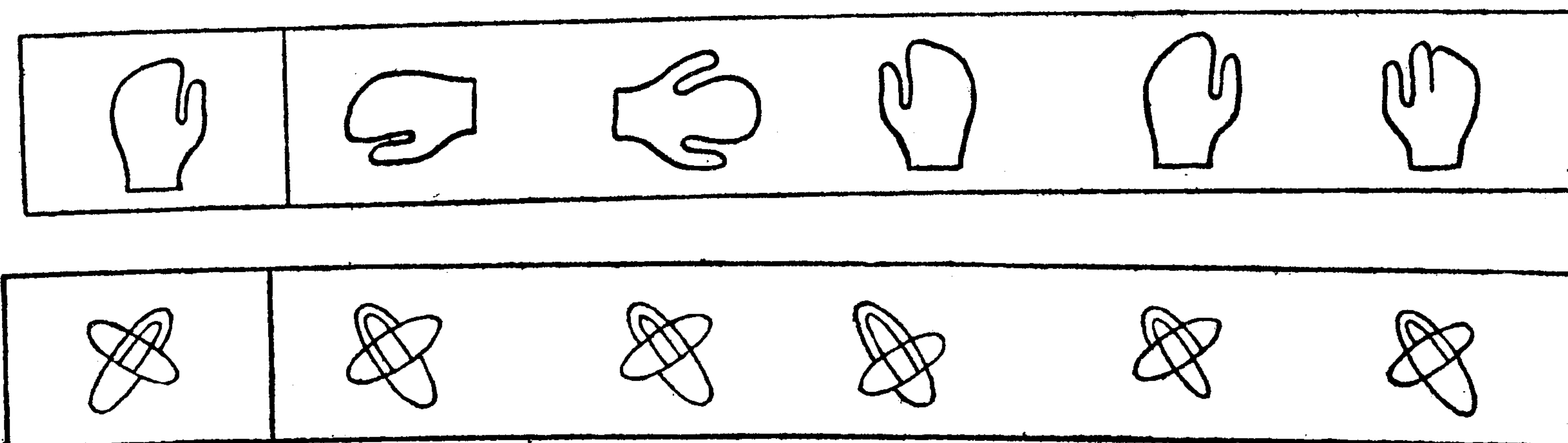
Analogies Relation.—Dog is to Bone as Cow is to ?. Instruction to underline one item in “box” on right. Similarly for the shapes in the second example.

(b and c)



Reversed Similarities.—Instructions (with illustrations) to pick out in “box” on right the mirror image of figure on left.

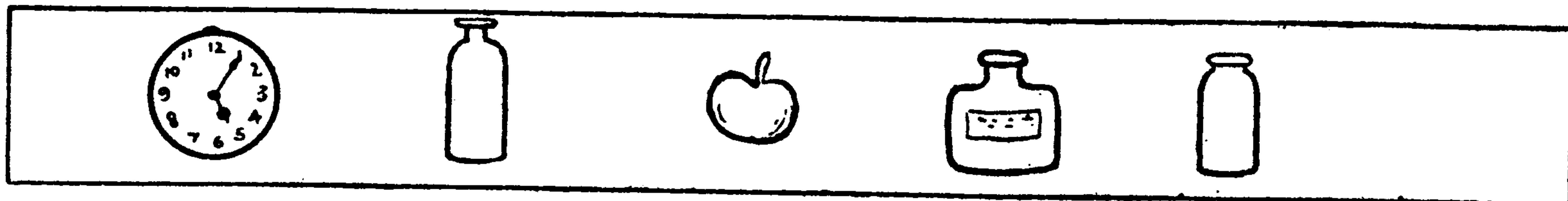
(d)



Obviously, by the very definition of I.Q., the average child or adult citizen has an I.Q. of 100. By a conven-

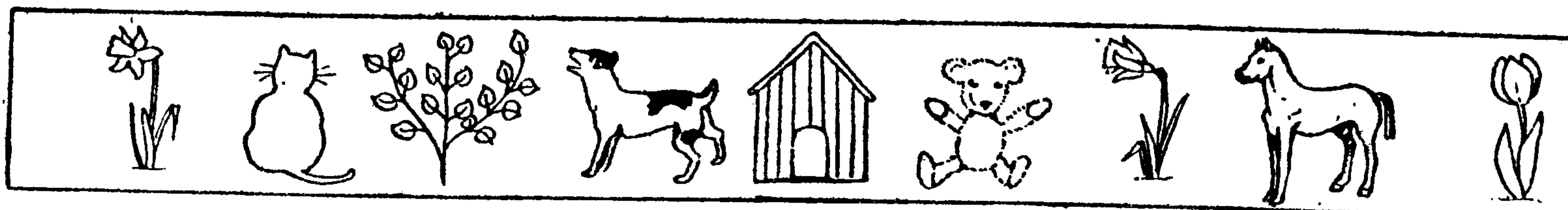
Instructions.—"Put a ring round the bottle that is shorter than the clock and wider than the apple."

(e)



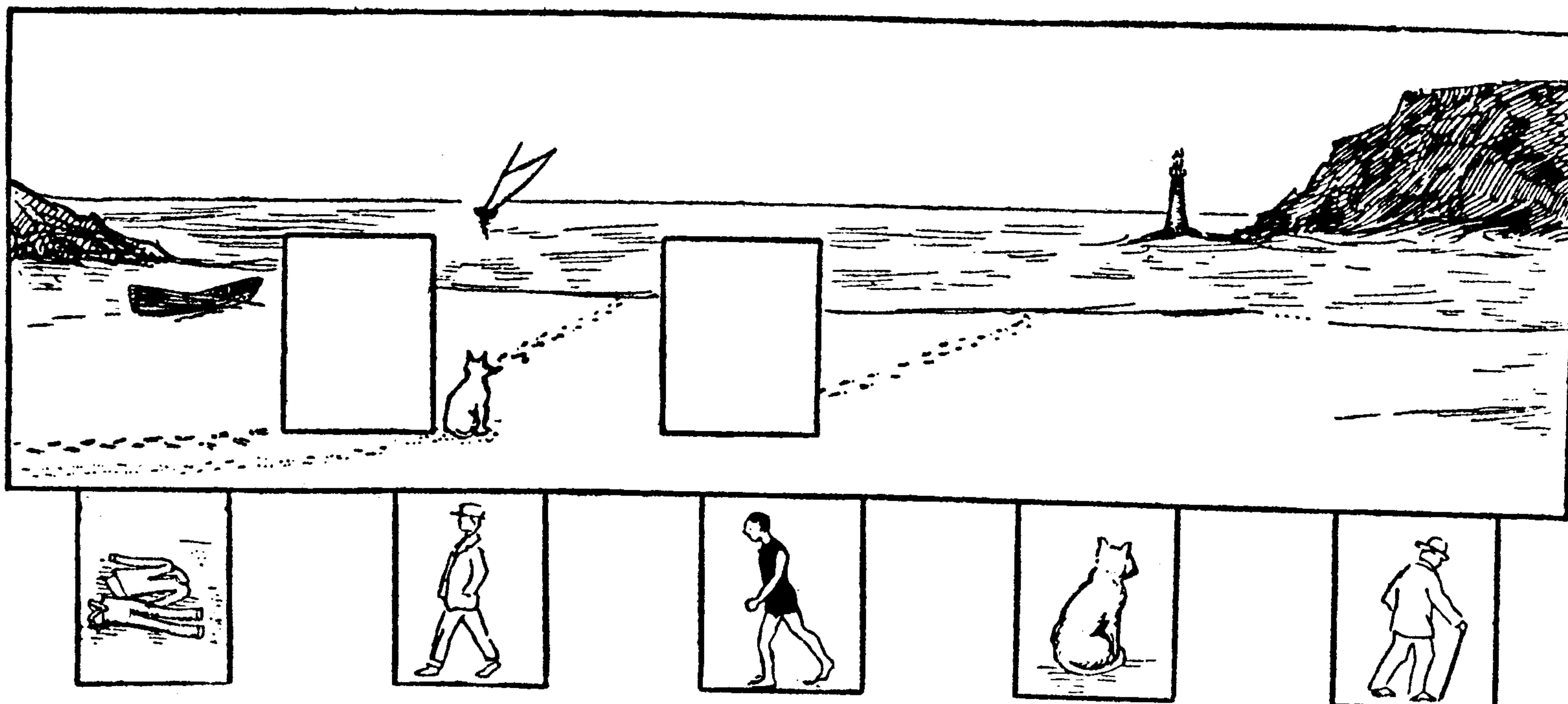
"Draw a ring round each animal that is between two plants, except when it is bigger than a pig."

(f)



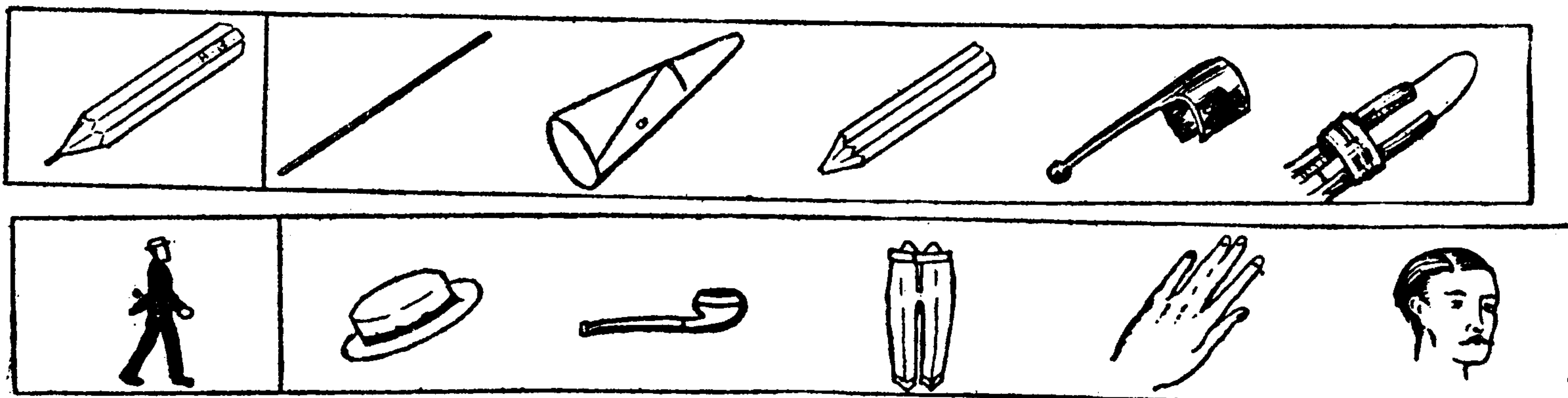
Picture Completions.—Two of the small pictures are to be inserted in the holes in the large picture to make it look sensible and right.

(g)



"*Always Has.*"—Two of the items on the right that are *essential* to the nature of the object on the left have to be underlined.

(h)



There was also a (visible) maze test and a seven-item "substitution" test. All tests were done to a reasonable time limit.

tion arising from experience the mental defective is a person having an I.Q. below 70.¹ A child in school who is considered "dull and backward" is commonly found to have an I.Q. below 80. Scholarship children (for secondary schools) are almost invariably above 120, whilst a strikingly brilliant child has an I.Q. of 150-170.²

2. CONCERNING SOME EMOTIONAL RESISTANCES FOUND WHERE SCIENCE PENETRATES POLITICS

Soon after intelligence tests were first used it was found that the intelligence quotient of each individual tends to remain constant. Literally hundreds of experiments in different towns, social groups and countries have since confirmed the general truth of this finding.³ I take at random, from my card index, Arthur J——, tested at eight years of age by my predecessor in office and found to have an I.Q. of 65. He was sent to a special school, is now about to leave at fifteen years of age. His I.Q., recently measured without awareness on my part of the previous result, was 67. Dipping again I find a "problem" child, I.Q. 141 at nine years of age. She failed a scholarship examination owing to emotional difficulties and an unsatisfactory home background. Tested recently at twelve years of age she has an I.Q. of 140. These minor variations of I.Q., up to five points, are found in about half the children tested and may be

¹ With improved tests, which "scatter" the population more widely, it may be found that 65 is the real upper limit of deficiency as defined by the social criteria of the Mental Deficiency Act.

² In testing thousands of children and adults over several years I have only twice met an I.Q. of 200—one in London, one in Leicester. This is an adequate capacity for a genius. See Terman *et al.*, *Genetic Studies of Genius*, for this aspect of the study of intelligence.

³ For a brief introduction to the theory and practice of testing the reader is referred to Dr. R. Knight's small book *Intelligence and Intelligence Testing*, or, more briefly still, to a chapter in my 'popular' introduction to psychology *Your Mind and Mine*. A brief but more thorough study is *The Testing of Intelligence*, H. R. Hamley and others, 1936. The classical works in this country are Professor Burt's *Mental and Scholastic Tests*, 1918, and Professor Spearman's *Abilities of Man*. The latter is indispensable to any thorough review of the question, and though it propounds forcefully the theory of "G" no bias is given to practical issues, since in practice even the opponents of "G" construct intelligence tests on the same principles.

considered as due to inaccuracies in the measuring instrument rather than to real changes, since they are as marked in re-tests after a lapse of a few days as after several years.

Experience of this kind, and much indirect evidence about the nature of intelligence, together with many direct experiments in which physical and mental environment have been altered without producing any change in I.Q., have convinced the great majority of psychologists that in the I.Q. we are dealing with something largely inborn and constitutional, like the colour of the person's eyes or the shape of his skull. Notice that this is not entirely the same thing as saying that it is inherited in any simple Mendelian fashion. Separate evidence must be considered on that point.

I have tried to make the above as correct an account of the nature of intelligence as can be given in a limited space, and for those who wish to delve further into the nature of the I.Q. and the causes of the slight variations which arise in it I propose to set out the evidence, with all its intriguing unsolved issues, fully, in an extensive footnote. But the psychologist, of all scientists, should be the first to recognise that there is all the difference in the world between the scientific evidence and the reception of it by the layman. Since this particular issue—the innateness of mental capacity—has fallen foul of some fairly desperate emotions ensconced in ancient traditions it would not be safe to continue without turning to face them.

There are people primarily political in outlook who approach the question of the innateness of intelligence with the knowledge that tests of intelligence have revealed a slight but definite grading of intelligence among social classes (see p. 61). Why this should be regarded as damaging to schemes for bettering the conditions of the unfortunate or to notions of equality of opportunity is difficult to understand, unless these people are guilty of very confused thinking or themselves habituated to giving a dog a bad name only as a preliminary to hanging it.

Again, there are others with a sense of racial inferiority arising from the mischievous use of "superior" and "inferior" in reference to racial differences, or people, racially in a temporarily awkward tactical position, who desire to lay as little emphasis as possible on racial differences. Intelligence tests point to significant differences between races: therefore the innateness of intelligence is a dangerous doctrine, to be covered at once with a fog of casuistry. Among those enemies of democracy, the eighteenth-century democrats, there is a conviction that "all men are born equal" (not merely equal in the right to opportunity). For them the psychologist's researches demonstrating individual differences in inborn mental endowment are works of the devil. Finally, there are sentimentalists who wish to believe that no living being is limited at all in the possibilities of his mental development. Every child is potentially anything and only the wickedness and stupidity of society prevent his development into a genius. "Know thyself," in the sense of recognising in what manner one's abilities are limited by endowment, and making the very best of them, is beyond the scope of their wisdom.

Encouragement is given to such critics, by the circumstance that, since the facts are open to everyone's observation, everyone is a psychologist. The layman is, in any case, inclined to think from unsystematic observation that intelligence varies widely with environmental influences, but he is unable, through lack of training, to separate mental capacity from acquired information and skills. A large book could be filled with popular notions concerning psychology which experiments have shewn to be hopelessly perverse.

Sociologists, economists, biologists and philosophers, moreover, blithely make holiday in the field of psychology, presumably when the confusion of their own subjects becomes too oppressive, and after arranging statistics concerning psychological facts with which they have no first-hand acquaintance proceed to make "authoritative" statements about mental testing or any other matter

which must be fitted into their favourite theories. It is obvious that in psychology, as in medicine, there is a sense which comes from first-hand experience and immersion in the facts. The psychologist studies the parts not from the angle of a political or social theory but as everyday matters of his science, and no psychologist engaged day after day in testing and watching intimately the progress of children and the reactions of adults, doubts that there are two distinct entities—the veneer of education and the inextensible innate capacity. Usually if a tool is faulty the person who has to use it most is the first to complain. It is a striking fact that in this field the people who have least practical experience are the most loudly critical.

3. MENTAL CAPACITY AS AN INBORN GIFT OF THE INDIVIDUAL

The evidence for innateness of mental capacity may be summarised under the following headings.

(1) The feeble minded (who are not, like imbeciles, a pathological type apart, but “normal” variants of intelligence) remain feeble minded whatever influences of environment, through mental stimulation or nutrition, are brought to bear. (Even the desperate remedy of opening the skull “so that the brain may grow” reveals only that the brain has reached the natural limit of its growth.)

(2) Brilliant men and men of genius similarly shew outstanding mental capacity from birth, in this instance outstandingly high capacity (as Terman’s studies of the childhood of genius shew).

(3) Among children in widely different physical and mental environments the Intelligence Quotient remains equally constant.

(4) Children brought up in the very same environment, e.g. orphanages, shew as big variations of intelligence as any other children (except when the parents are selected from one class).

(5) Identical twins have practically the same intelli-

gence quotient and even when reared apart no marked difference of I.Q. arises between them.

(6) Groups of children given "intensive education" or special feeding shew the same "normal" rate of intelligence growth as do control groups lacking these advantages.

(7) The cessation of intelligence growth at an early age, long before environment has had its maximum effect, points to an innate basis of development.

(8) The connection of mental capacity with the number of myelinated nerve cells, suggested by the work of Lashley and others,¹ points to intelligence having the same degree of innateness as physical characteristics, e.g. skull shape and size, which are known to be unaffected by normal variations of environment.

(9) The possibility of breeding in an animal species a strain possessing significantly greater all-round learning capacity than that of other strains has been experimentally demonstrated (see Tryon, below).²

Fuller details of the solved and unsolved problems in this field are given below.²

¹ See, for example, Berry, R. J., "The Study of Mental Abnormality," *Brit. Med. Journ.*, Jan. 1928.

² NOTE SUMMARISING INVESTIGATIONS ON INNATE AND ENVIRONMENTAL FACTORS IN INTELLIGENCE

A. MAINLY MENTAL ENVIRONMENT

1. *Effects of Differing Environments and of Definite Change of Environment.*—The evidence of the constancy of I.Q. for individuals in different environments is too widespread to be gathered here. (Foran lists titles of eighty researches: "The Constancy of the Intelligence Quotient," *Cath. Univ. Amer. Res. Bull.*, Nos. 9, 10.) On an average an individual's I.Q., re-tested after a lapse of months or years, is four or five points altered (see Schwesinger, *Heredity and Environment*, p. 52), but this alteration is just as frequently up as down, i.e. for groups, quite small groups, the I.Q. does not change. The individual changes are, therefore, most probably ascribable to experimental error in measurement.

Any imperfection of the test will increase the apparent variability of the I.Q., as will clerical errors, illness and all manner of chance factors. Since the earlier tests on which this degree of constancy of the I.Q. was recorded were far from perfect, it seems legitimate to argue that with improvement of tests and elimination of chance effects, i.e. with approach to measurement of the real I.Q., there would be a corresponding approach to exact constancy.

This general tendency to constancy of I.Q. throughout the population is itself convincing evidence of a big innate factor in I.Q.; for under modern conditions all people have a considerable environment in common, and any one individual is subjected to many different environments. Moreover, in schools there is a systematic tendency to leave the bright to mark time whilst concentrating on coaching the backward and prodding the dull—a tendency which, if environment is effective, should lower the I.Q. of the bright and raise that of the dull.

Distinct change of environment, as from an elementary to secondary school, or bad to good homes, also produces no change. Rogers, Darling and McBride (*Nature and Nurture: Their Influence upon Intelligence*, 1928) tested and re-tested 64 girls committed to good institutional care from extremely poor social and educational conditions. They were compared with a control group of unselected children in a public (elementary) school. There was no difference beforehand and no significant change of I.Q. afterwards in either case. Lawrence, in this country ("An Investigation into the Relation between Intelligence and Inheritance," *Brit. J. Psychol., Monog. Suppl.*, No. 16) likewise looked for changes in I.Q. in children of drunken, insane or criminal parents, after shorter and longer periods of institutional residence, but with all the changes of personality and character there was no change in the fixed rate of development of mental capacity.

Freeman (*Nature and Nurture, etc.*, see above) studied 74 children in unsatisfactory conditions adopted into private homes. The average I.Q. beforehand was 91.2 and four years later was 93.7, the difference not being statistically significant.

Shepherd Dawson (*Brit. Assoc. Report*, 1934) tested a number of children in slums (Glasgow), about half of whom were soon afterwards moved to improved conditions in a new housing estate. The I.Q. of the moved group remained constant and did not differ from that of the group remaining in the slums.

2. *Studies of the Similarity of the Intelligence of Relatives and of the Effect of Environmental Differences* ("Same heredity: different environment").—There is a correlation of the intelligence of sibs (brothers and sisters) of about 0.5. Schwesinger (op. cit., p. 232) summarises the results of twenty-two researches, all concordant in shewing this agreement. The average coefficient of the six most satisfactory researches (eliminating all working with fewer than 500 pairs of sibs or using the Binet test, which is unduly susceptible to environmental influences) is 0.458. Such evidence of heredity is not sufficient since part of the sibs' environment (the hours spent at home) is common. We are indebted to Burks (*Nature and Nurture: Their Influence upon Intelligence*, Pt. I, Public School Pub. Co.) for an analysis of measurements on siblings reared apart. The correlation was $.44 \pm .07$, not substantially different from that found when reared together. Freeman (*Nature and Nurture, etc.*) and Hildreth ("The Resemblance of Siblings in Intelligence and Achievement," *T. C. Contrib. Educ.*, No. 186) found respectively for sibs reared apart correlations of intelligence quotients amounting to .49 and .34, i.e. averaging about the same as for sibs reared together.

The intelligence of twins—of identical twins having the same genetic constitution—is well known to be strikingly similar. Hogben ("The Intellectual Resemblance of Twins," Herrman and Hogben, *Proc. Roy. Soc. Edin.*, 1933) summarises the results of the four principal researches which give inter-twin correlations of 0.90 ± 0.02 , 0.88 ± 0.02 , 0.92 ± 0.01 , and 0.86 ± 0.04 .

These correlations, as also the actual distribution of differences of I.Q. (see Schwesinger, *op. cit.*, p. 223) are, in fact, the same as those which are obtained from testing and re-testing the same identical individuals; i.e. the "differences" of twins may well be experimental error only.

Here again there is an element of common environment which, if environment affects I.Q., could be responsible for part of the complete agreement, and no really adequate research has yet been made on twins reared apart. Schwesinger (*op. cit.*, p. 221) reports ten cases of pairs of identical twins reared apart and finds intra-pair difference of I.Q. of 7.7 points as compared with 5.3 for non-separated identical twins. But this was on a Stanford Binet test which might well react to differences of cultural background and training. Amidst all these researches the only evidence suggesting an appreciable environmental influence on I.Q. occurs in the narrow field of twin studies and is provided by Holzinger and by Hogben (*op. cit.*). The latter, from a comparison of the variability of identical and non-identical twins, concludes it is extremely "unlikely that genetic differences account for more than one-half the mean difference between offspring of the same parent." Before accepting such an interpretation, however, the reader should note: (1) It is extremely difficult to distinguish identical and non-identical twins infallibly. Any confusion would give results depreciating the innate element in intelligence. (2) This worker's own finding that $t^2 = 2.4$ gives inheritance a bigger rôle in determining variance than is indicated by the above statement. (3) The intelligence test used, though better than the Stanford Binet, was still fairly susceptible to environment and training. (4) The statement that within the family genetic differences do not play so big a rôle must not be interpreted to apply to intelligence differences in general; for within the family we should not expect inheritance differences to be very great.

Perhaps the most extensive and able research into the evidence regarding hereditary intelligence derived from twin studies is that of Hirsch (*Twins: Hereditary and Environment*, Cambridge, Mass., 1930) which concludes that the average intra-pair difference for identical twins is two points of I.Q. and for non-identical twelve points. This makes heredity about five times as important as environment in determining intelligence, and is in agreement with the studies of sibs and other relatives.

3. *Studies of Intelligence Resemblance of Unrelated People Subjected to the same Environment* ("Same environment: different heredity").—There are three adequate researches as to whether children reared in the same institution for a sufficiently long time tend to become more similar in intelligence. Hildreth (*op. cit.*) measured 84 children reared in an orphanage for 50 to 100 per cent of their lives. The variation was as great as for unrelated children reared apart. Davis ("The Influence of Heredity on the Mentality of Orphan Children," *Brit. J. Psychol.*, No. 19) divided orphan children into groups according to length of stay, but found no convergence of intelligence compared with an outside group. Lawrence (*op. cit.*) found similarly.

Another approach is to correlate the intelligences of unrelated children in the same foster home, to see if the correlation approaches that of real sibs, in which case some of the resemblance of real sibs could be put down to the home environment. Freeman (*Nature and Nurture, etc.*) found a correlation of .40 between foster sibs and sibs, and Burks (*op. cit.*) one of .20 of the child's intelligence with the intelligence of the (mid-) foster parent. Burks concluded that 17 per cent of intelligence variation can be put down to environmental influence. Burks, Freeman and Jones (*op. cit.*) think that about seven points

of change in I.Q. may result from a marked change in environment. All this foster-home evidence, however, is vitiated by an effect which social psychologists have often pointed out: that consciously or unconsciously those who place foster children tend to place the brighter children, from parents of better social position, in better families and vice versa. When Freeman investigated this pre-selection effect in placement he found a correlation of .34 of pre-adoption I.Q.'s with the Home Rating scores of the homes to which the children went, but in spite of this disastrous discovery (the coefficient is practically that found for true parent-child resemblance) he courageously continues "since all of the observed correlation of 0.40 could hardly be due to selection," etc. This error, which runs through all foster-home studies, combined with the fact that the results are in Stanford Binet measurements affectable by cultural influences, justifies us in concluding that there is no convincing evidence derivable from this field of any appreciable environmental influence on I.Q.

4. *Studies on Intelligence in Animals.*—There is as yet insufficient evidence regarding the existence of "G" or the means of testing mental capacity in animals. But, owing to the readiness with which experiments in controlled breeding can be carried out, an animal population offers the simplest means of demonstrating the large extent to which changes in learning capacity can be influenced by heredity. Tryon ("The Inheritance of Mental Ability," *Psychol. Bull.*, No. 29, and Schwesinger, op. cit., p. 334) started with an unselected rat population and bred two "races," one from the most able in maze-learning, one from the dullest. In seven generations not 1 per cent of the rats in the dull group could, with the same training, equal the performance of even the dullest rats in the "bright" strains.

Summary.—The most "environmentalistic" interpretation of these results assigns an influence of about seven points of I.Q. (for an average person) to environment. But what is this to the 170 points range of I.Q. available in the present hereditary gene endowment of mankind? Actually, this seven points is, to any broad survey of the evidence, quite excessive. Most of the evidence yet available was gathered with tests devised before the present advances in the theory of intelligence, poor in "G" saturation and weighted with items of learning and information. Typical of this stage in technique is the work of Woolley ("The Validity of Standards of Mental Measurement in Young Childhood," *School and Soc.*, No. 21) whose results are interpreted to mean that attendance at nursery school increases the child's I.Q.; though the test used, the Merrill Palmer, is full of nursery school attainment items, success in which is almost uncorrelated with "G."!

Viewing from all angles the evidence given us, I confidently anticipate that when testing technique is more perfected and stabilised we shall find much of this conflicting evidence vanishing like snow in spring sunshine. I would predict that the most extreme changes of environment in the community will prove to change the I.Q. by three to four points—at the utmost by five points—and then only when the influences are effective in very early years.

B. PHYSICAL ENVIRONMENT

Although, as far as mental training is concerned, intelligence seems to proceed practically unhindered and unhastened to its own goal of maturation, psychologists have long supposed that physical influences, affecting the central nervous system itself, might influence mental capacity. Thus Professor Terman in 1913 wrote, "The effect of malnutrition on mental development is probably very great."

It appears, however, that the general public to-day, like the psychologists before they began investigations, labours under a serious misapprehension, which may dangerously mislead social reform. The facts, which are now well attested, are as follows:

1. *Physique and Intellect*.—There is a small positive correlation of intelligence with height and weight. (Terman, *Genetic Studies of Genius*, Kempf and Collins, and Paterson, *Physique and Intellect*.) Terman's group of 1,000 highly gifted children were in practically every measurement larger and stronger on an average than the 1,000 average children. There is also a tendency for the more intelligent to be relatively free from constitutional physical defects and to have a lower incidence of disease (Terman, *op. cit.*, Paterson, *op. cit.*, Spearman, *Abilities of Man*). The following are the suggested reasons for this connection. (1) Mental defect is sometimes associated with a general constitutional inferiority of which physical defects are another expression. (2) Children of lower intelligence come, on the whole, from parents of low intelligence and consequently are less hygienically and intelligently health-educated. They may also be undernourished because (a) the father, if very unintelligent, is unlikely to earn much, (b) the mother, if unintelligent, is unlikely to spend well. (3) In social life, through assortative mating and the inbreeding of social classes, there is a tendency for the most diverse desirable qualities to come together in one hereditary "complex," and for the lack of them also to be associated, though they have no intrinsic biological (gene) connection.

2. *Adenoids, Tonsils and I.Q.*—Dullness has long been popularly and medically associated with diseased adenoids and tonsils. Rogers (*Archives of Psychol.*, No. 50, 1922) studied 530 children. Those with adenoid or tonsil trouble had the same average I.Q. as those without. A group of 28 children operated on shewed, a year after the operation, a gain of I.Q. of 2.25 points, but this is not significant, for the group which refused operation gained 3.28 points: both are chance gains. This result is confirmed by Terman, Lowe, Hofer and Hardy, also by Richey ("The Effects of Diseased Tonsils and Adenoids on the Intelligence Quotients of 204 Children," *J. Juv. Res.*, 1934, No. 18). Well-being, freedom from mental fatigue, etc., is increased, but not mental capacity.

3. *Other Diseases and Glandular Dysfunctions*.—No disease not attacking the central nervous system is known to diminish I.Q. Spinal meningitis, epidemic encephalitis and arteriosclerosis may produce a fall of I.Q., but not invariably.

The treatment of thyroid, pituitary and pluriglandular defects has failed to produce evidence of any significant change of I.Q. (Paterson, *op. cit.*, p. 191) except in cretins and even there the mental improvement is far less spectacular than the physical.

4. *Malnutrition*.—It is unfortunate that medical diagnosis of malnutrition depends largely on comparison of height and weight with standard values; for in a mixed racial population (such as the British) if the smaller racial element happened to be the more intelligent any effect of malnutrition on intelligence might be quite obscured.

A group of children suffering from severe malnutrition of two or three years' standing was first studied by Blanton in Germany (*Mental Hygiene*, 1919, p. 378) in 1919, who was surprised to find that "children with parents of average intelligence very rarely become feeble minded through malnutrition even of an extreme degree." Later studies have dealt with malnutrition rather

than starvation, but their methods have been more exact. Hunt, Johnson and Lincoln, Dowd, Nicholls, Stalnaker and Stoke, have each concluded as a result of statistically controlled intelligence surveys that "undernourished children, whatever their other handicaps, are no whit inferior mentally to well-nourished children of the same race and social status." In muscular strength, freedom from fatigue, happiness and activity in school, the well nourished are, of course, decidedly favoured. Dowd, for example, found that the 55 studied undernourished children improved with proper feeding in all respects but I.Q.

Though such direct evidence scarcely needs checking by indirect evidence, it is interesting to notice that indirect light is thrown on the matter by a study of the relation of birth order to I.Q. In families below subsistence level, since wages do not increase with age, the later children would shew more malnutrition than the first born. Although birth rank has many effects on character it has none whatsoever on I.Q., as many adequate researches have shewn, providing, of course, that birth, rank and I.Q. relation is worked out in families of the same size. See summary by Seashore, "A Study of 1,739 Cases, with adequate Age Controls, etc.," *Proceedings of the Western Psychological Association, Los Angeles, June 1933*.

One must conclude that nature has designed so many safeguards around the vital central nervous system that few diseases or unfavourable physical conditions can attack it. This view is in accordance with the physiological studies of Scammon (Paterson, op. cit., p. 175) that even in gross malnutrition which retards physical growth the nervous system continues to grow, apparently at the expense of the bodily tissues themselves.

Pre-natal physical conditions may exert an influence on I.Q. Children born in summer are on an average $1\frac{1}{2}$ points of I.Q. brighter than those born in winter. (Pintner and Forlano, "The Influence of Month of Birth on Intelligence Quotient," *J. Educ. Psychol.*, 1933, No. 24.) This undoubted fact may be due with equal probability to a slight preponderance of more intelligent parents among those who plan to have their children in the summer months when conditions are better. For when Pintner and Forlano studied the birth months of eminent men (*J. Appl. Psychol.*, 1934) they failed to find any seasonal connection with "degree of eminence," etc.

Contrary, then, to our supposition, intelligence is affected if at all by mental rather than physical influence. Society may lavish attention on physical improvement and training for the perfectly good object of improving energy and well-being, but not under the delusion that the mentality of the race is improved thereby.

For further investigation of these questions the reader is referred to Schwesinger (op. cit.) for a complete summary of evidence regarding mental environment and to Paterson for a similar service with respect to physical factors and intelligence.

The upshot of our investigation is that mental capacity may be increased about three to seven points by some mental environments. The most recent investigation and summary, Leaky, A. H., "Nature-Nurture and Intelligence," *Genet. Psychol. Monogr.*, 1935, No. 17, concludes "Measurable environment does not shift the I.Q. by more than three to five points." I think fuller psychological investigation will shew that if, by forcing and overstrain, the individual is adjusted constantly to working at the upper limit of his innate mental capacity, it will be at the cost of other aspects of personality, notably, perhaps, at the cost of a reduction of "fluency of association" and resource

4. THE MANNER OF INHERITANCE OF MENTAL CAPACITY

The evidence regarding the inheritance of intelligence is as follows:

(1) About 75 per cent of the children of the feeble minded (both parents feeble minded) are also feeble minded and the remainder are not far above the border-line.¹

(2) The children of people of outstanding capacity also shew (except when one parent is much duller than the brilliant one) outstanding capacity, compared with other children having the same advantages.

(3) A correlation (of about 0.5) is constantly found between the intelligence quotients of siblings (brothers and sisters).

(4) When school children are arranged in groups according to the complexity and intelligence demand of their fathers' occupations, higher intelligence is found on test among the children of parents in the more complex occupations.

(5) When adults and children are tested directly with intelligence tests a good correlation of the mid-parent (parental average) with the mid-child (average of children in the family) is found. Individual children do not correlate so well with the mid-parent (indeed, the correlation is lowered if only one child is taken) and no one has yet established how inheritance takes place, e.g. what dominant and recessive factors are concerned or how many genes are involved. But it is already practicable to predict that the children of a group of parents of higher intelligence will have greater mental capacity than the children of parents of lower intelligence.

Since no research in this last category has yet been

and the increase of schizophrenic traits. And when those who insist on altering environment only have stretched the I.Q. of the nation by say three points they may wake to the realisation that it is falling by that much every generation through hereditary changes (see p. 42), and that some more enterprising community has in the meantime raised its average by thirty points through selective breeding.

¹ See author's letter in *Eugenics Review*, Jan. 1937.

carried out in this country¹ we tested, as already stated, 100 families, with the following results.

After ranking the families in the order of intelligence of the parents (mid-parents) they were divided in ten consecutive groups of ten families according to parental intelligence. The average intelligence of the children of each of these ten groups of parents was then worked out and set down for comparison opposite the average for the parents. Since several of the parents were over sixty and since there is evidence of a decline of I.Q. with age during middle age (see below) I have thought it desirable to correct the parent's scores by an age factor (see footnote below). The need for this is also evident from the fact that the children apparently score more highly than their parents throughout. The new parental average is set beside the old one. In both cases the result is the same: that the order of intelligence of the children agrees with that of the parents.

AMOUNT OF INHERITANCE OF MENTAL CAPACITY.²

	Mean I.Q. of Parents (corrected for age).	(Raw I.Q.)		Mean I.Q. of Children.
20 parents at	155.2	(147.5)	had 21 children at	148.8
20 „ „	148.4	(142.3)	„ 23 „ „	147.0
20 „ „	145.2	(135.0)	„ 21 „ „	143.5
20 „ „	133.0	(125.5)	„ 21 „ „	137.1
20 „ „	123.6	(111.0)	„ 21 „ „	127.1
20 „ „	107.0	(99.5)	„ 19 „ „	118.1
20 „ „	95.0	(88.3)	„ 26 „ „	102.9
20 „ „	76.4	(75.3)	„ 15 „ „	93.9
20 „ „	71.4	(67.9)	„ 24 „ „	92.5
20 „ „	67.6	(63.5)	„ 32 „ „	77.0

¹ See, however, Dr. Lawrence, op: cit.

² NOTE ON TESTING OF PARENTS AND CHILDREN AND EVIDENCE OF OTHER RESEARCHES ON INHERITANCE OF INTELLIGENCE

The adults and children in these families were tested with Scale O, I, II or III of my intelligence tests, the scale being chosen to fit the age of the child or the approximate mental age of the adult. This has the advantage that more accurate measurements were made than if one coarsely graded scale were used to cover the whole range. On the other hand, error may be introduced into the interpretation of the measurements if the standardisation of

The correlation of the mid-parent with the mid-child works out in these 101 families at $+ 0.73 \pm 0.03$.

With such findings it is reasonable to conclude that with groups—even quite small groups—we may regard mental capacity not only as an innate characteristic but as one which has been inherited from the previous generation and will be passed on to the next.

In the environment *v.* heredity controversy the verdict of the psychologist on the psychological field is, in a word, that mental capacity is inherited, but that character, emotional reactions, habits and skills are largely matters of environment. All recent research, even though in solving one problem it creates others, shews more and more the futility of the Nature *v.* Nurture debate as it is popularly conducted. The terms of reference and the framework of the argument have been awry from the

the various scales is not equally sound. However, even should the standardisation figures for these scales alter slightly as more extensive standardisation results come in, the data will still be of value and can be re-interpreted more accurately at a later date.

The correlations and other measures of agreement of parents and children may not be as high from this sample as from a purely chance sample; for there is undue bunching at the upper levels of intelligence, due to the difficulty we experienced in getting any but professional and ex-university parents to submit to an intelligence test. Indeed, we quickly realised why this obviously necessary measurement of parents and children had never been carried out in this country before. Most of these parents were tested with Scale III. When we came to the duller parents, less literate people and dull children, Scale I was always used, and we are confident that in no instance was an adult tested with a test demanding greater vocabulary than he possessed.

I have shewn elsewhere ("Occupational Forms of Intelligence," *Brit. J. Psychol.*, 1934) reason to believe that intelligence, or at any rate success in intelligence tests, declines in most people after about the age of thirty-five. There are some striking exceptions to this and the nature or causation of the effect are not at all clear. From preliminary observations I am tempted to conclude that initially high intelligence (well used?) does not decline so much as low intelligence and that the big individual differences relate themselves to differences in general senescence. Other investigations, however (Miles, C. C., "Influence of Speed and Age on Intelligence Scores of Adults," *J. Genet. Psychol.*, 1934, No. 10, finds a correlation of $- 0.5$ between age and intelligence between 20 and 95 years of age at each of three intelligence levels), shew the same trend, and I have, therefore, thought it advisable to correct the scores of the older parents by an age allowance. The need of this allowance is shewn by the decidedly higher score of the children compared with the parents in any one group. My own previous results ("Occupational Forms of Intelligence," loc. cit.) which, though scanty, are the only ones available in this country,

beginning. Measurement was late in being introduced, no distinction was made between different features of mentality and physique, and misunderstandings arose through inadequate definition of "environment."

It seems to me, looking back, that the exponents of "Nature"—mainly scientists—never dreamt of denying that a suitable environment was necessary for the development of hereditary qualities. Their arguments proceeded, "Granted a normal, adapted environment, then . . ."

No one of them has ever suggested that cutting a man's head off will not affect his intelligence, or that swathing a child's head in tight bandages throughout infancy will not affect his cephalic index. On the other hand the "Nurture" enthusiasts—generally propagandists—have asked us to ignore heredity completely and to

indicate for one occupation (clerks) the following fall in points of I.Q. from the adolescent level:

35 years.	45 years.	55 years.	65 years.
3	16	31	68

Circumstantial evidence suggests that this fall is to be regarded as excessive, and I have sought an independent standard by averaging in age groups the present group of 100 parents, with the following result:

Age	40 years	55 years	65 years
Regression on Children's I.Q. . .	8.5 points	12.5 points	14.5 points

From a consideration of these and certain American results I have adopted the following approximate rate of age correction:

<i>Parental Age in Years</i>	30	Above 35	40	45	50	55	60	65	70	75
<i>I.Q. Correction</i>	nil	+2	+4	+6	+8	+11	+14	+17	+20	+24

This has been applied to the raw I.Q. results of the parents, shewn in the second column, with the results shewn in the first column.

Other Researches Concerning Inheritance of I.Q.

Evidence regarding the innateness of I.Q. is given in footnote to p. 27. Evidence regarding inheritance is given separately here, though there is in some points an overlap. Schwesinger summarises sixteen investigations of parent, child, grandparent and cousin intelligence relationship. Of these only three give the correlation of the mid-parent and the child or mid-child and one of them is not based on a direct intelligence test. We are left with Jones' enquiry (*Nature and Nurture, etc.*), using the Stanford Binet test and finding a correlation of mid-parent and mid-child of $.693 \pm .035$ (105 cases) and Out-

concentrate on environment, which can do anything, producing figs from thorns and grapes from thistles. One of the last desperate attacks on the statistics regarding the hereditary nature of intelligence argues that "environment is not sufficiently allowed for, since a good intelligence makes the same environment actually a more favourable one, more stimulus for intelligence being perceived in it"!

Even now, when much painstaking research has cleared up the main issues, the scientist who would think boldly and practically on these issues will encounter a criticism which is perhaps the remnants of the old emotional resistance in a new form. It is the assertion that one must refrain from action until hereditary

hit (51 cases) finding $\cdot77$ to $\cdot80$ ("A Study of the Resemblance of Parents and Children in General Intelligence," *Arch. Psychol.*, No. 149). It is unfortunate that even in these investigations one is dependent on a Stanford Binet result—limited in adult range and tainted with education effects—whilst one enquiry has only 51 cases. For one parent with one child the correlation is, of course, lower, averaging about $0\cdot49$.

The three adequate investigations making direct measures of parents and children, two undertaken in America and our own in this country, thus agree in indicating a correlation of about $0\cdot7$ to $0\cdot8$ between mid-parents and mid-children.

The supplementary investigation that is still required—a comparison of parents and children when they are not brought up together—has never been made directly; though our own results include several instances of children reared apart, instances which do not differ in amount of parent resemblance from the other cases.

Dr. Lawrence, however, has brought substantial indirect evidence of a convincing nature ("An Investigation into the Relation between Intelligence and Inheritance," *Brit. J. Psychol., Monog. Suppl.*, No. 16). It is well known (see p. 62) that the average intelligence of parents and of children in different social and occupational groups differs significantly. Lawrence correlated social status of parents with intelligence of children (*a*) When the children were in their own homes, (*b*) Among children in an orphan institution. In both cases the correlation was $0\cdot24$. Elsewhere she shews the actual differences are not quite so great in the institutional children, but, on an average, the professional man whose child has to go into an institution may not be quite so successful or intelligent as his fellows. From this effect we should not expect the results to scatter quite so much as for typical families in these social or occupational groups.

The upshot of these investigations is evidently that, whatever the environment, we can predict the intelligence of the children from a certain intelligence grade of parent, knowing that it will be substantially the same as the intelligence of the parental group.

mechanisms are completely understood. My friend Professor Ginsberg, in his stimulating introduction to sociology, writes, a propos of eugenics, "to justify social control we need a great deal more than a merely rough empirical knowledge of heredity."¹ We are all grateful to think, however, that Francis Drake did not defer using cannon against the Armada on the grounds that there then existed only "a rough empirical knowledge" of gunpowder or that Jenner did not defer attacking the scourge of small-pox because the physiology of vaccine was not then fully understood.

We must distinguish between the laboratory, where the only satisfactory goal is complete and ultimate truth, and the adventure of living in which the wise man is he who can discern and act upon a strong probability. The affairs of the nation are in the second category and the happiness of each one of us depends upon those in control being wise enough to encourage scientific research and apply it at the first opportunity.

¹ *Principles of Sociology.*

CHAPTER IV

THE MAGNITUDE OF THE NATIONAL DECLINE, AND ITS PROBABLE EFFECTS

I. CALCULATION OF THE CHANGES OCCURRING BETWEEN TWO GENERATIONS

HAVING shewn that for groups, even quite small groups, the intelligence of the offspring is substantially the same as that of the parents, we are enabled to calculate from the reproduction rates of Diagrams IIA and IIB the extent of the damage which our heritage of mental capacity is suffering through the differential breeding of this generation.

For by dividing the number of people in any one intelligence category (obtainable from Diagrams IA and IB) by the size of family found in that category (and multiplying by two) we can find the number of people at that intelligence level in the last generation (i.e. the present adults). Similarly, assuming that children will themselves tend to have the same birth rate when they grow up as their parental group now has, the numbers in each category can be multiplied by the reproduction rate to get the distribution of intelligence in the children following the present generation of children.

A simple calculation from the two new distribution diagrams thus obtained—that for intelligence in the ten-year-old children of 1965 (assuming a generation to be thirty years) and that for the present parents averaging forty years of age—will enable us to compare the average intelligence of the present generation with the last and the next generations.

Naturally the calculation will only be an approximate one, for it is our intention not to take this research to finer conclusions, or to use more delicate methods at

any point, than are justified by the extent and nature of our data. Thus throughout we have used such terms as birth rate and fertility in a general sense rather than in the strict and narrow mathematical sense to which they have become refined by population statisticians. For in the first place the figure of simple family size which the conditions of our research causes us to use is not strictly comparable with any of the standard indexes which statisticians employ for most population calculations. It is nearest to the "net reproduction rate" with which, by the aid of a correction to be obtained from knowledge of life tables, etc., a statistician might be able to compare our results with reasonable accuracy. Such steps, however, are scarcely warranted save for historical purposes, for in the first place the differential birth rate is, let us hope, constantly altering for the better under social and eugenic measures.

Again, an exact prediction would need to take into account (1) The fact that a small proportion of our families are not yet complete. Since these would be the larger families this omission would tend to reduce the apparent decline obtained by our figures. (2) The hereditary "regression towards the mean" of the individual measured in our testing in relation to his parents and siblings. This is a slight effect which would tend to make the real change in average I.Q. rather less than that indicated by our figures. (3) The fact that the siblings are scattered over a wider range than that of the category in which the measured individual child belongs and to the numbers in which the reproduction rate factor is applied. This would not affect our particular calculation systematically.¹ (4) The incidence of celibacy, late marriage and childlessness may not be equally frequent at all intelligence levels.²

¹ There would, of course, be no error from fact that in a cross section of the population at any one age one is more likely to hit the large families. We begin with the present child generation as it is, i.e. already modified by the differential fertility of the last generation.

² Except in the special case where the size of family is just sufficient to keep the population at a constant level the length of generation is quite

None of these is important except the last. That celibacy and childlessness are appreciable is evident from the fact that though the reproduction rate, or rather the survival rate, is more than three children per pair of parents the population as a whole in these areas is practically stationary.¹

Unfortunately I had no means of discovering, without the opportunity for an additional enquiry, the relative prevalence of complete childlessness at different intelligence levels. It is only to be inferred from indirect evidence, and this inference I have left to Professor Fisher, whose acquaintance with the statistics of population trends is unrivalled. From his discussion of the problem and from the scanty independent evidence I have set out below,² there seems little doubt that childlessness is somewhat more prevalent among the intelligent.

In the present calculation, after multiplying the numbers in each category by the appropriate birth rate, I have divided throughout by a factor necessary to bring

important. The section of the community practising early marriage and reproduction will, on a more than sufficient birth rate, increase much more rapidly (according to a geometric progression) than a section having the same size of family but constrained to marry later.

¹ Dublin, *Population Problems*, calculates that of 1,000 females born 788 will eventually marry, and of these marriages 1 in 6 is completely childless. The remaining families must therefore average 3.1 children to keep the population constant in size. Enid Charles (op. cit.) considers that 788 is decidedly too high.

² As regards social and occupational incidence of childlessness there are adequate results from three countries. Stuart found the percentage of childless marriages (mean of rural and urban) among the poor to be 12.6; among the moderately well off 13.6 and among the well-to-do 14.3. Rubin and Westgaard in Copenhagen found similarly for merchants and officials 12.9 per cent; small traders 13.2 per cent; teachers and commercial agents 15.0 per cent and wage earners 11.5 per cent. (From "The Problem of Differential Fertility," Rumney, *Population*, Nov. 1935.) In Germany more complete population studies shew a close positive relationship of high social status and high rate of childless marriages. ("Neue Beitrage zum deutschen Bevolkerungsproblem," *Sonderheft*, Nu. 15.)

For their completion these figures require evidence about the frequency of marriage itself. In England a partial answer is given on this matter by the comparison possible in the census figures between the marriage rate among professional men and that of the population in general. At every age level the proportion of people married is lower among the professional workers. (*Occupational Tables*, H.M.S.O., 1934.)

the population back to the same size. Since this childlessness factor should properly vary slightly with intelligence level my calculation does not give quite such a

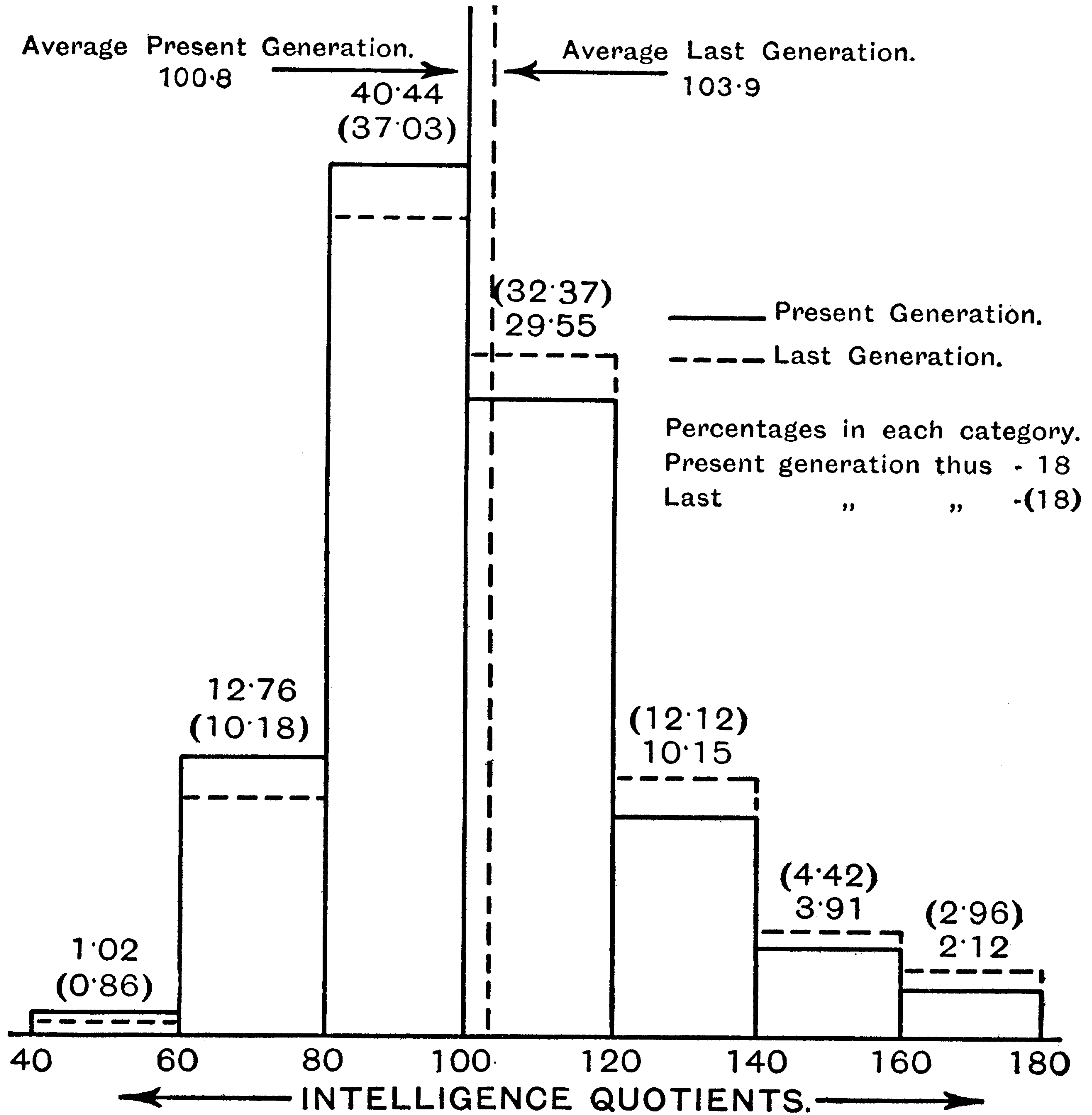


DIAGRAM IIIa.—Alteration of Distribution of Intelligence. Present Adults to present Ten-year-olds (1936). Urban Area.

large decline of intelligence as that which must actually be taking place.

Speaking in round terms a decline of average I.Q. for town and country of about three points per genera-

tion is indicated; or one point per decade. If this were to continue for three hundred years half the population would be mentally defective. Since the changes which mark the rises and declines of history are certainly not

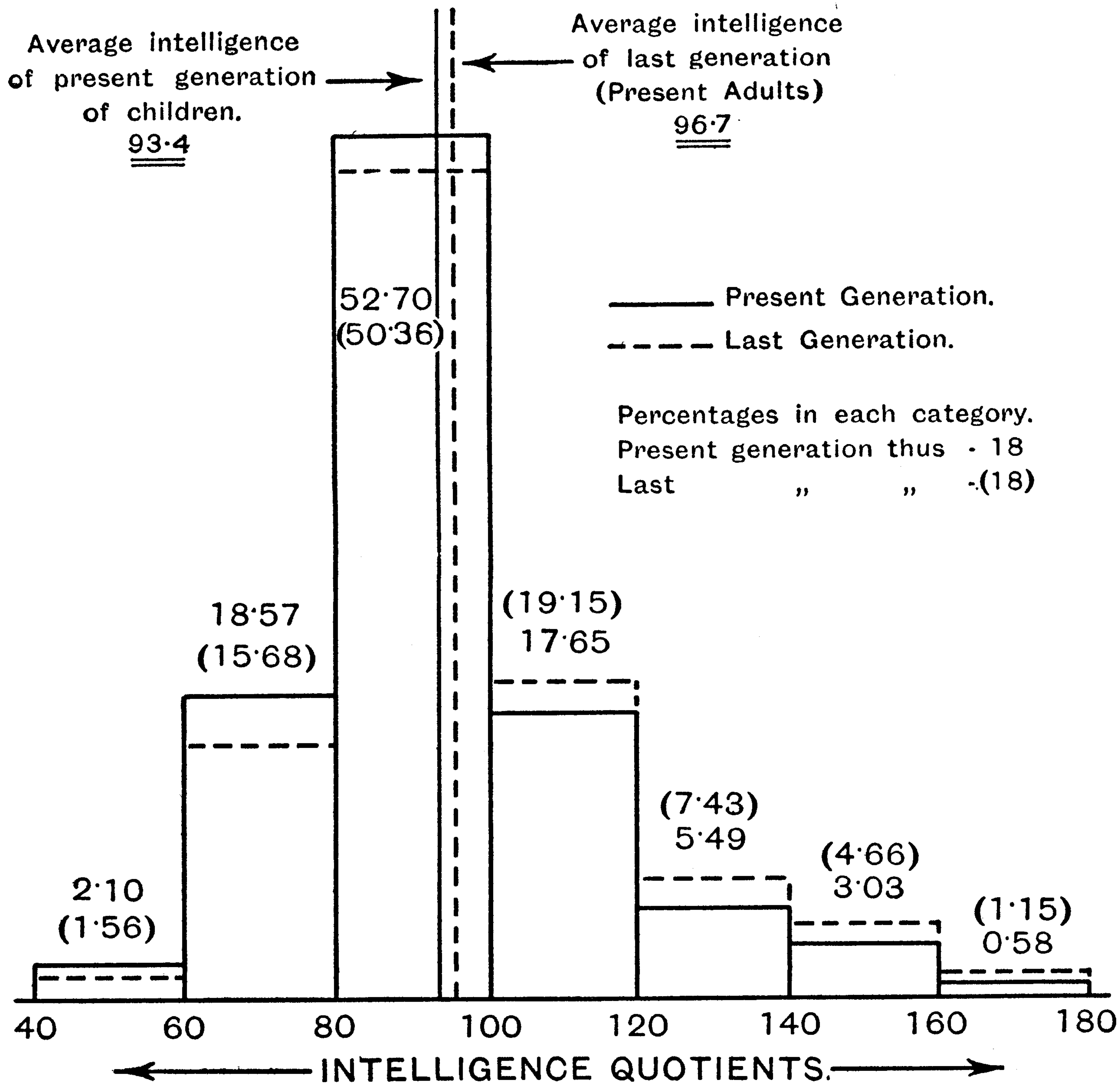


DIAGRAM IIIb.—Alteration of Distribution of Intelligence. Present Adults to present Ten-year-olds (1936). Rural Area.

as drastic as to require wholesale mental deficiency, the present rate of change must be one of the most galloping plunges to bankruptcy that has ever occurred.

Before making this survey I had expected the greatest change to be in the number of borderline defectives. In fact, approximately a 30 per cent. increase of mental

deficiency is indicated—big enough, yet not so striking as the changes at the other extreme of the scale. For in the country group the very able children, above an I.Q. of 140, are cut down by almost a half, whilst the town, in a generation, loses approximately a third of

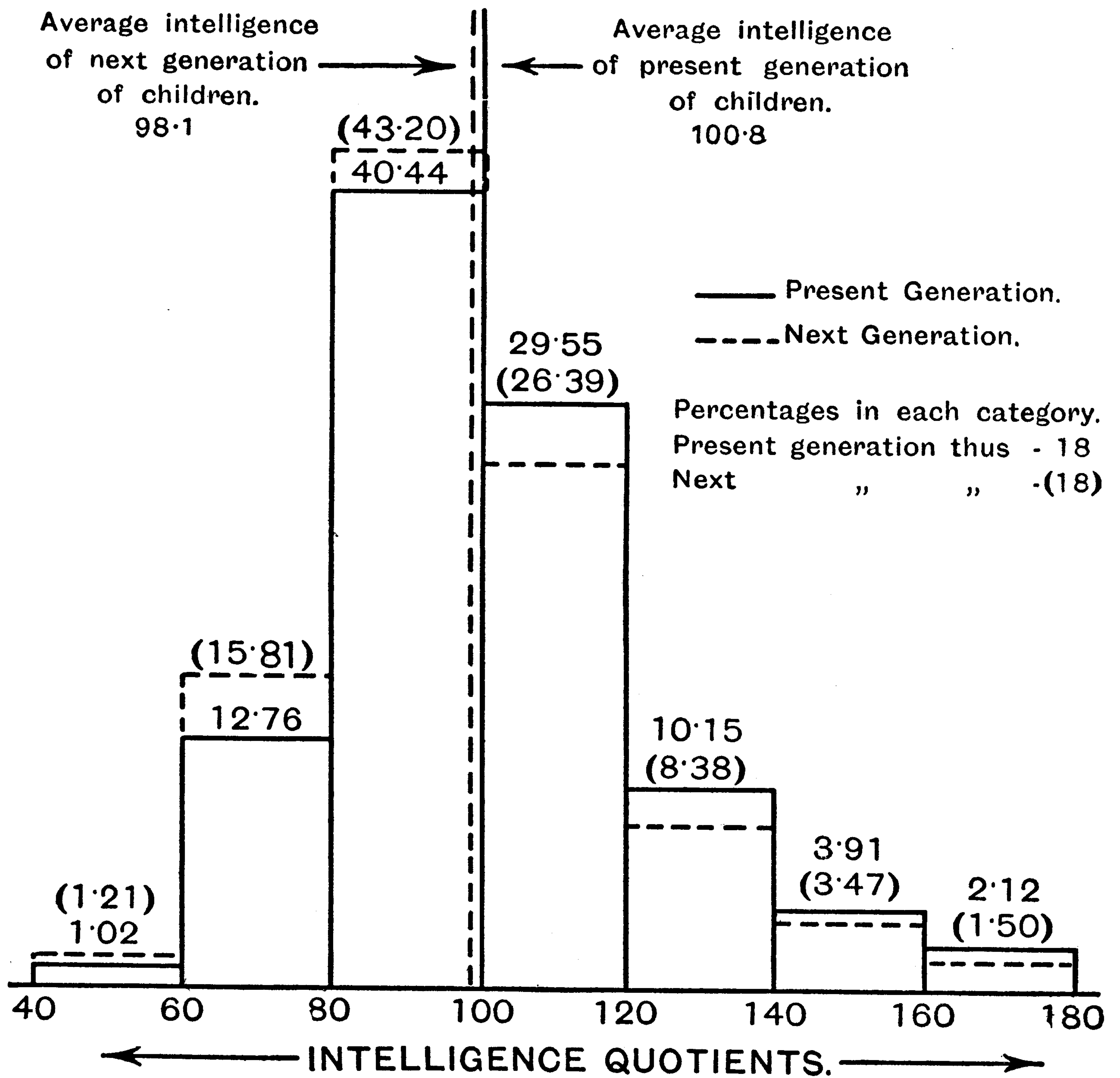


DIAGRAM IVa.—Alteration of Distribution of Intelligence. Ten-year-olds 1936 to Ten-year-olds 1966. Urban Area.

the children above an I.Q. of 160. The magnitude of these changes is such that the prediction should admit of being checked by re-testing the same areas with the same test after no greater lapse of time than ten or fifteen years.

Those who wish to proceed to further refinements and critical accuracy in this melancholy calculation may do so, and as a scientist I should be interested to accompany them; but as a citizen I say it is enough for me that

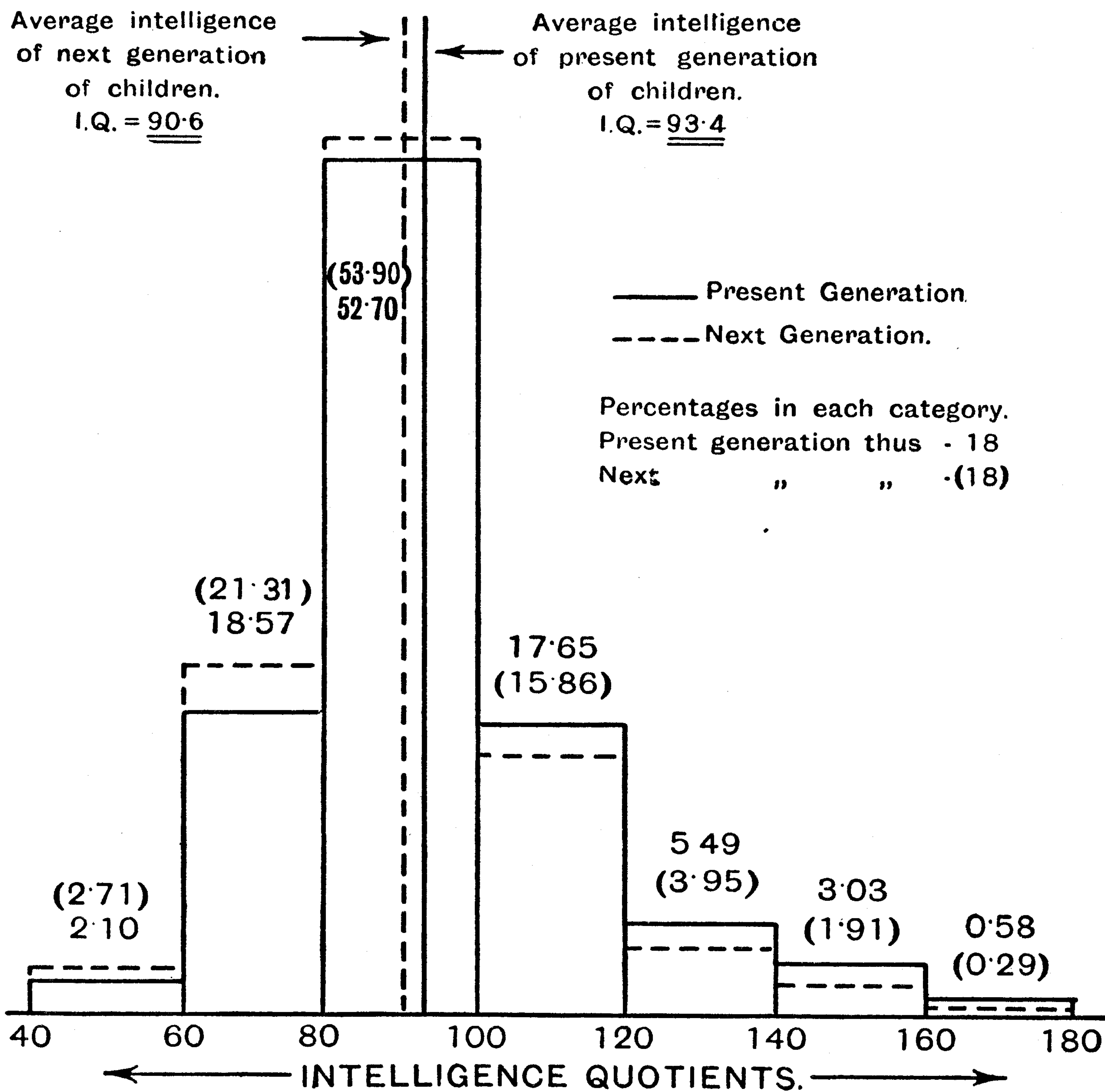


DIAGRAM IVb.—Alteration of Distribution of Intelligence. Ten-year-olds 1936 to Ten-year-olds 1966. Rural Area.

a decline is occurring at all at a critical era of civilisation when every available understanding is needed for reconstructive efforts.

Moreover, even if this retreat were arrested immediately—a Utopian dream with our present scientifically

ignorant leaders—much damage would be done. The next generation is already starting out defective in intelligence. It behoves us as realists to face the dangers with which we are threatened as a result of this decline, for the effects will be much more pervasive than most people imagine and will turn up in strange and unexpected places. Once having inspected fearlessly the dangerous rocks and shoals to which the ship of state is foolishly sailing we shall be better able to indicate the course by which she may be extricated, if we are so fortunate as to catch the helmsman's attention in time.

2. DISCUSSION OF THE QUALITATIVE AND QUANTITATIVE EFFECTS

(a) *On Education*

Nowadays, owing to the improvement of school classification, scholarships, etc., our educational systems present the picture of many well-defined "streams" of pupils, graded according to mental capacity. The stream slowest in progress is that of the mental defectives in special schools; at the opposite extreme are the scholarship pupils going through the A classes of secondary and public schools to scholarships at the universities.

The 30 per cent. increase in mental defectives calculated for the next generation means a disproportionate increase in the cost of education; for the defective child costs roughly £36 per year to educate compared with £12 or £13 for the average child.¹ When one reflects that it costs the army £1,151 a year to train a cavalryman² this may not seem excessive, but the point is that there is nothing to shew for it afterwards, so that school teachers and inspectors are themselves the first to complain that too much is being spent on the dull child.³

¹ These figures are given by the Director of Education for Leicester. The Board of Education Report states: "The residential defective costs six times as much as the normal child."

² Select committee of M.P.s enquiring into economies, Daily Press, July 5, 1936.

³ Actual certified defectives are now costing more than £11,000,000 a year from public funds. The *Public Assistance Journal*, 1935, states: "Provision

Even though given two more years of schooling than the average child and helped by devoted individual attention the feeble minded rarely learns to read to any useful extent or to carry out the simplest calculations; yet if neglected he becomes defective also in general habits and character, leaving school as a permanent drag on the labour market and a persistent petty criminal. Although the feeble minded are increasing in numbers,¹ there can therefore be no question of expending less on them. Consequently if the education grant is not increased the education of the brighter child is going to suffer progressive impoverishment, e.g. by the cutting down of scholarships.

But in school as in after life the actual certifiable defective is probably not the worst problem; one meets that rather in the "dull" group, just above deficiency (I.Q. 70-80). In order that these may reach any reasonable standard their curriculum has to be shorn of the liberal subjects—history, geography, biology, civics, hygiene—which alone make full citizenship possible. As is well known, the elementary schools, which take the majority of our future citizens, divide their pupils into three or more streams, according to capacity. One of the chief reasons why children now run away from home to school when formerly they ran away from school, is that, through the application of psychological knowledge, the curricula of these A, B, and C classes is tactfully graded to the interests normal to the mental capacities drafted into each stream. Where the A child revels in geometrical problems and the finer points of history the C child enjoys simple shopping arithmetic, handwork and the story of a few battles. To the layman nothing

for mental defectives is going forward surely, if slowly . . . over 2,254 new beds were provided by local authorities, which compares favourably (*sic*) with the record of previous years."

¹ This has already been observed by the mental deficiency committee and is not due to more searching surveys alone. "The cost of the mental deficiency service rose from £12 to £36 per thousand of the population from 1920 to 1930." Lord Dawson of Penn, "Medical Science and Social Progress," *Brit. Med. Journ.*, Nov. 2, 1935.

could be more instructive regarding the implications of intelligence differences than a comparison of the standards of interests of A, B, and C classes, extended if possible to include intermediate and secondary schools on the one hand and special schools for the defective on the other.

Though we may congratulate ourselves on this improvement in educational understanding, whereby the dull child is no longer driven with fear and nervous strain to waste efforts on what he cannot do, we forget all too easily the logical conclusion of an education which is "child-centred" rather than "subject-centred." It is that the schools become what the public, by its birth rate and its choice of schools, likes to make them.¹ There is no doubt that the elementary schools, though far from perfect, are staffed and equipped to carry a cultural education much further than is now possible. They require only the birth of more able children and the sending of children to elementary schools from homes of good background. The latter is fortunately happening increasingly with the decay of snobbery, but the present distribution of birth rates is making more and more C class children.²

Industry and the civic problems of our time alike require more children having the outlook and accomplishments

¹ That is why I take issue with the emphasis and conclusions of the extensive intelligence test survey of Gray and Moshinsky (*Sociological Review*, April 1935). They notice that there are many children of good intelligence in elementary schools and argue that secondary school accommodation should be increased to include them. Admittedly teachers are very conservative in scholarship selection methods, as I know from my efforts to improve scholarship selection by psychological tests of intelligence and temperament, but if only the right children were in secondary schools there would be no need to increase the accommodation. The percentage of the population going through secondary schools and universities is fixed by social, vocational needs. The level of liberal education in any school is determined by the quality of the raw material, and there are already in secondary schools many unable to rise to the education provided. The cry of "no opportunity" is due to a lack of vision concerning what education means.

² This follows from the birth rate and intelligence figures, but out of curiosity I have also arranged the birth rates of the A, B, and C class children respectively in three elementary schools. They are: A class 2.61; B class 3.14; C class 3.95.

of the A class child; but the nation is going to be supplied increasingly with pupils adapted to a C class training. This painful dislocation between the needs of the community and the education of its citizens is bound to extend through the whole range of education. The cry that the standard of culture in universities is not what it was is an old one, to which we should not give much credence, were it not backed up by independent evidence. We know that university students, particularly the women, are very sterile compared with the rest of the population, and though they may be replaced by more thorough combing of the general population through scholarships, etc., the fact remains that intelligence quotients above 140, suitable for advanced university study, are going to diminish rapidly if the present trend continues for the next few generations.

To the man who has no feeling for education and culture in themselves, or who has never known the teacher's joy in watching brilliant young minds leap to fresh solutions of old problems, the loss to education which this change entails can only be brought home on the financial side. One must repeat that it costs many times as much to educate a dull child to the same level of attainment as that reached easily by a bright child; indeed, some of the best-educated leaders of the last generation were self-educated. The bright child is always self-educating. An increase in dullness is an increase in expense.

Even were there no deterioration of the race the present differential birth rate would be bad enough in its educational effects; for it means that the largest families are those in which children are least intelligently brought up—and the home is the chief determiner of character and social attitudes.

Apart from increase in expenditure, we may expect that present scholastic standards will not be maintained and that the change will be most appreciable in an increase of children leaving elementary schools with sub-normal attainments and a decrease of those able to profit by

university education. The keeping of reliable records should enable teachers to report on the matter relatively soon, perhaps in ten or twenty years' time.

(b) *On the Moral Tone and Character of Society*

The connection of delinquency with low innate intelligence, first established by Burt¹ and by Healy about twenty years ago, has since been confirmed in other countries and social groups. Whilst the causes of this connection are not fully known there seems little doubt that the child or adult of small mental capacity is more liable to criminal behaviour because:

- (1) He cannot foresee the certainty of detection of his anti-social actions.
- (2) He lacks the ability to give successful expression to his instincts in a complex environment. He is more easily frustrated and exploited by others. In short, he suffers from a greater burden of suppression.
- (3) Not only is he denied expression by lack of success but at the same time he is least able to feel satisfaction in those sublimations of instinct energy—in art and music, science and social service—which civilisation provides; for good intelligence is necessary to get interested in them.
- (4) Being of low intelligence he generally has unintelligent parents who follow inconsistent and short-sighted policies in character education.
- (5) He lacks judgment and is highly "suggestible" to evil influences.

Doubtless the present increase of juvenile delinquency has many roots, but one of the deepest is the increase of children in the "dull" category of intelligence.²

¹ Thus in London Burt found the delinquent group to average 89 in I.Q. as against 100 for non-delinquent children of the same social class. (*The Young Delinquent*, p. 296. See also Dr. Goring, *The English Convict*.)

² The annual committals to Home Office schools (for juvenile delinquents) increased from 1,800 in 1933 to 4,000 a year in 1936. In some circles, par-

The same process must be considered in international delinquency—War. For whereas a nation may achieve success in the arts of peace only by the possession of a sufficient body of able and enterprising citizens, it may use for purposes of war a mentally lower grade. The qualities of a mental defective are admirably suited for a rank and file that has “not to reason why” and which has its food and clothing, exercise and recreation provided for as in an institution. Mussolini made an army out of his unemployables, or, at least, his unemployed, and the temptation to such a solution must exist wherever an undue birth rate has been encouraged in a low-grade population.

That a real “revolt against civilisation” smoulders whenever civilisation breeds too many low mentalities cannot be doubted and, as Freud has shewn in his *Civilisation and its Discontents*, this disease may take many forms. Porteus’s finding of low average mental capacity in South American half-breeds has some connection with that sensitiveness to ordered government which makes every government so soon irksome to the populations of those parts.

Illustrating the same principle the most stable and quietly progressive countries of Europe are those which the American intelligence surveys shew to be the highest in average intelligence,¹ according to the samples taken.

Terman,² who compared the thousand most gifted children (on I.Q.) in California with a thousand average children, putting them in actual situations testing character, found that the gifted children were superior all along the line in character reactions, honesty, dependa-

ticularly stern Puritan ones, the psychologist is thought of as the “devil’s advocate” because, in treating individual delinquents, he frequently pleads that the standards of repression and control demanded of the individual have been too exacting. Unfortunately those who oppose this tempering of the wind to the shorn lamb are often equally obstinate in opposing the only humane solution which presents itself: that defective mental constitutions should not be born.

¹ See *Psychology and Social Progress*, C. W. Daniel Co., Chap. II.

² See *Genetic Studies of Genius*, Terman and others.

bility and regard for truth. Now there is no doubt that in essence, and in its original psychological nature, mental capacity is a thing entirely independent of character (I have known mental defectives of great stability and bulldog dependability in limited issues); but it is equally certain that in a complex environment good character tends to become built on good mental capacity; indeed it is difficult to imagine the finest characters—as of a Christ or Socrates—without an adequate basis of mental capacity.

Nevertheless, capacity and character in the individual are to a considerable extent independent variables, and since the latter is far more dependent upon the conditioning of environment it is conceivable that a nation's moral tone could be in the ascendant even while its average mental capacity was declining—but only in the special circumstance of a people in a pretty derelict moral condition coming under the influence of an entirely new moral code propounded by some inspiring leader. To a nation already possessing a sound heritage of religious, patriotic, liberal and humane habits of thought, lacking nothing but the capacity perfectly to realise them, a fall in the average mental capacity threatens at once to vitiate the moral tone and purpose of the group as a whole and to increase the number of individuals deficient or anti-social in character.

That is to say, that for groups as a whole, the fact that character and intelligence are initially distinct in the individual is of no importance. In communities as a whole the moral customs and the degree of enlightenment and general organisation derive directly from the average level of mental capacity. For, there being no outside force to mould the community, the direction and level of its moral enlightenment is dependent upon the cumulative effect of its component intelligences. This is not only to be theoretically expected but is experimentally proven by the surveys of Hartshorne who found that the “differences among religious and national groups in moral knowledge (determined by objective

tests) seemed to be almost wholly a function of differences in levels of intelligence.”¹

(c) *On Culture and Recreation*

With the promise of increased leisure, resulting from applied science, and already realised to some extent in most occupations, the problem of how this leisure is to be used—whether harmlessly, dangerously or with spiritual and physical benefits—becomes of acute importance. Educators are thinking busily at the moment of “educating for leisure.”

At the risk of being accused of a monotonous theme one must emphasise the none the less true fact that the extent to which education can lead to a good use of leisure depends upon the native mental capacity of the individuals concerned.

Unfortunately it is far from true that “little things please little minds.” The most stupendous spectacles need to be staged to entertain a Roman rabble, whereas an Isaac Newton can sit in an orchard and be infinitely intrigued by a falling apple. If with much labour and sorrow and educational expenditure you convince a youth of I.Q. 80 that he likes Shakespeare you may rest assured that your cruelty will receive no permanent justification, for in a while he will be enjoying himself at a gangster film, unconsciously following the wise injunction, “to thyself be true.”

It would take one into deep waters to discuss adequately why for a tired man's recreation Aldous Huxley is preferable to all-in-wrestling, or why, for inspiration, Beethoven is superior to bull-fighting. The thing is intuitively self-evident to all who esteem man for what makes him man. Each mental capacity is entitled to its own amusements. But that does not invalidate the judgment that some amusements are intrinsically “higher” than others, more favourable to the tone of a civilised society and endowed with more permanent

¹ “Sociological Implications of the Character Education Enquiry,” *Amer. J. Sociol.*, 1930, No. 36.

satisfactions. For that reason it seems desirable for people to enjoy themselves mostly at the upper limit rather than the lower limit of their range of appreciation. To force people beyond the upper limit is to create an unhealthy, affected highbrowism, and for that reason it is a mistake to have born into society people for whom the average film, political conversation or newspaper article is too "highbrow"—yet practically all those below an I.Q. of 80 may be said to be in this category.

Few activities have such subtle influence as a man's recreations on the general development of his personality and his social and religious attitudes. Consequently it is of considerable social importance whether the coming leisure is to be spent in betting and watching sentimental films or in more healthy and creative amusements. Moreover, few things ruin the healthy solidarity of mankind so much as difference of taste in enjoyment: the laughter or the hissing of one part of a cinema audience is often ugly and incredible to another part.

A meat-eater in a colony of vegetarians, or a moderate drinker in a circle of drunkards, is under a continual awkward constraint owing to the unconscious urge to conformity and the actual practical convenience of conformity. Similarly in this matter of the use of leisure, numbers count. The victory is to the pervasive average. An undue preponderance of low intelligence can swamp a minority and set a tone in our newspapers, films, novels and social recreations which makes life intolerable for that minority. The tone of the newspaper with the record circulation may become a national menace. And we have to decide between making life intolerable for the group that is leading society onward or for the group that is dragging it to the dust. Again there are economic aspects; both in that a dull population offers a living only to inferior artists and writers,¹ and in that

¹ One is at first inclined to blame the journalist for the fatuity of the big-circulation newspapers. But every day promising young journalists are being "broken in" from the temptation to deal with current affairs intelligently until by long practice their minds acquire the rapid and stale reactions which the public wants.

the cost of entertaining a dull population, by reason of more spectacular requirements and more material pleasures, is a greater proportion of national expenditure.

Now a hundred years ago, when an unjust system of privileged social classes kept a considerable number of men of great ability in the "working" class, that class produced the Mechanics Institutes and many another circle where the working man spent his meagre pence and hours of leisure in reading good literature and enjoying good discussion.¹ To-day, in spite of increased wealth and leisure, that class spends a much smaller proportion of its energies on intellectual compared with instinctive and physical satisfactions.² Indeed, the same holds with respect to the community as a whole.³ If this can happen as the result of one kind of sifting of intelligence—that due to social promotion of the brighter—it can happen equally from another kind—changes in the proportion of bright and dull through the differential birth rate.

The psychologist can only predict that the present trend of intelligence distribution will entail a dilution and vulgarisation of our cultural life; he cannot say that that is bad or undesirable, for every level of intelligence finds its own form of expression satisfying, and in a world where the higher intelligences have dwindled there will be few to deplore the decay. Yet, in so far as the dullest is vouchsafed glimpses at times of the

¹ It may be objected that a section of it also indulged in cock-fighting and bear-baiting; but the same section to-day refrains from these only from fear of the law and from the spread of humane feeling, not from any sense that the diversion is silly and trivial; even more silly and trivial amusements, as in racing dogs after mechanical hares, attract large sums of money to-day.

² The W.E.A. is scarcely a workers' group to-day and its most able students are older people, who, had they been at school in the last twenty years, would have been taken out of their class by scholarships.

³ Interest in poetry may be taken as a good example. Speaking of the negligible allowance made in the Civil List to the dependants of the deceased poet Sir William Watson (July 1936), the Director of the Poetry Society, Mr. Galloway Kyle, stated, "The sales of most modern poets are absolutely limited, the restriction being probably greater than at any time in history." Sir Walter Scott received something like £20,000 for the *Lady of the Lake*. What section of the community values these satisfactions as so precious to-day?

greater worth of the things above him, we all know that the wallowing of the dull in his dullness does not constitute the best of all possible worlds.

(d) *On Social Progress and Reform*

Most philosophers and politicians forget that the social principles which they advocate, e.g. freedom or slavery, dictatorship or democracy, monogamy or polygamy, have "truth" only in relation to some particular species of animal, to some particular biological sample of mankind and some actual distribution of, for example, mental capacity.

The Australian Blacks, whose mental capacity on tests is in the region of our dull- and feeble-minded group,¹ not only started out with a culture in which even house building was unknown, but in spite of two hundred years' exposure to suggestions of civilisation they have been unable to build up for themselves a level of civilised behaviour which even the most reactionary European peoples would regard as sufficient or tolerable.

A race intermediate in mental capacity, the Negro,² has established a stable culture both in Africa and America, but it has contributed practically nothing to social progress and culture (except in rhythm, sensitiveness to which is revealed by tests to be constitutionally better in the negro than the European). All the social and religious notions which have been sedulously grafted upon the negro have been forcefully adapted by him, made more simple and crude and emotional. I cite this example merely to shew that, even when the race is a constitutionally good-natured and lovable one, lower mental capacity means reaction, crudity and a social deadweight of conservatism.

Civilisation, then, is not a thing in itself which can be

¹ See Porteus.

² The various testings of negroes in different social and geographical environments point to an average I.Q. of 83 and a 60 per cent overlap of the brightest section of the negroes with the dullest section of whites. See *Psychology and Social Progress*, p. 52.

transported hither and thither and which can live in virtue of its own vigour. It may linger in a preserved state in the dusty pages of books, but it lives again only in relation to living flesh and blood. The noblest thoughts of Greece went begging for a home when the germ plasm carried by Homer, Plato and Pheidippides had died. Similarly, the sweetness and light of the best ideas of to-day will remain but a haunting reproach if the brain of the race takes on mean proportions. Civilisation must be thought of as a melody played on the living brains of men. However magnificent may be the music which past and present geniuses have composed it can never be rendered fully on instruments which have lost the original complement of strings.

Too often the glib prophets of progress fail to observe the distinction between science on the one hand, which is a slow accumulation of accidental and hard-won discoveries (applicable by those of good moderate intelligence who can be trained to it), and, on the other hand, art and music, morals and character. These latter have not progressed in many centuries because they depend directly on the mental stature of the race. As Shaw has aptly said "Steam locomotion is possible without a nation of Stephensons, although national Christianity is impossible without a nation of Christs."

Every new and hopeful thing in social progress, every step towards greater happiness and freedom, requires for its success the support of an adequate number of people capable of appreciating the significance of the new truth—and that generally involves grasping some abstract principle in place of a traditional practice. As Professor Terman's study of political leaders shews, the good radical is not a neurotic with an emotional attitude of revolt, but a person of greater mental capacity than the humdrum routine workers in the same walk of life. In society as in the classroom, steps which cost sweat and blood to a dull group, are adopted with ease and delight by the more gifted. Up to the present no reformer has looked far enough to see the importance

of maintaining the numbers of people of high intelligence necessary to build up the shock troops for the contemplated advance.¹

Practically every advance in social life, leading to greater self-realisation by the individual, has more freedom as its first essential. Let us take as an example the present wave of educational innovations sponsored by such bodies as the New Education Fellowship. It aims among other things at giving the child more freedom of choice and subjecting him less to authority and tradition in his behaviour and the formation of his opinions. It produces fine products in the schools concerned, but tests shew their pupils to be far above average intelligence, i.e. highly selected. When sincere and able men propound such systems as having universal validity they become genuinely surprised and indignant at the fact that three-quarters of the educational world remains "irrationally" resistant and conservative.² Though I agree with these innovators I decline to regard all the resistance as "irrational," for it is certain that in the 70-85 I.Q. range the greater part of these ideas is inapplicable. Children of limited mental capacity cannot be left to reason to their own beliefs—fifty years of schooling would not be long enough. In social conduct as in arithmetical method they can be left very little to their own devices. Nor do they themselves appreciate this freedom, even if given it from the beginning. Intuitively, or from a summation of experience,

¹ There is one notable exception and I quote him because he approaches from an independent angle, spurning science and depending only on a ripe experience of the error of his earlier statements. Bernard Shaw confesses: "I do not know whether you have any illusions left on the subject of education, progress, and so forth. I have none. Any pamphleteer can shew the way to better things; but when there is no will there is no way. My nurse was fond of remarking that you cannot make a silk purse out of a sow's ear; and the more I see of the efforts of our churches and universities and literary sages to raise the mass above its own level, the more convinced I am that my nurse was right. . . . Being cowards we defeat natural selection under cover of philanthropy: being sluggards, we neglect artificial selection under cover of delicacy and morality."

² See, for example, W. B. Curry's very enlightened treatment of education in *The School*.

they seem to realise that their greatest happiness lies in a benevolent dictatorship, a tradition, and simple, binding rules of conduct. Without these they flounder into delinquency.

Freedom demands discreet judgment and adaptability to new situations and these are just the qualities that are least susceptible to education, but spring most directly from mother wit itself.¹ The educator used to speak of training intelligence: he now speaks more modestly of teaching people to use in reasoning what intelligence they possess; and even this kind of training is a two-edged weapon. You can train an imbecile or an ape to use a knife or a fork, but you cannot train him to decide when to use either. Just so, you may seek to educate a dull citizen to a progressive outlook so that on all occasions he cries, "Ring out the old, ring in the new," but he is no better off and decidedly less safe than when he clings pathetically and with equal consistency to outworn traditions. Education may carry to a large number of people desirable habits that are new to them, but it can only distribute that culture which already exists. The new habits of thought to be distributed are the education-defying products of creative intelligence working in a gifted minority. Education is least effective in giving that fine discrimination and subtly moderated response which makes higher freedoms and new planes of social living possible, for these powers are functions of "G."

From a psychological analysis of social behaviour, therefore, we should expect the result of a fall of average intelligence to be a generally stiffening of custom and a recrudescence of simpler, more primitive types of all-or-none reaction, often clothed, doubtless, in attrac-

¹ See the scientific study of *Adaptability to New Situations* by Professor S. R. Laycock. In this connection one may take as an example the sex reforms advocated by Bertrand Russell in *Marriage and Morals*. A sensitive discrimination and innate sense of decency is required for their success which can only be developed in persons of sufficient intelligence. There are solid objections to the spreading of his ideas into the rapidly increasing 'sub-cultural' group.

tive new names.¹ The history of declines in civilisation confirms this. Mobile streams of creative thought set into crusts of hard formulæ, which crack into revolution and anarchy under the mutual impacts resulting from unintelligent handling.

Historically a race destined to be great must necessarily start with customs and organisations of a complexity far below its real educable capacity. It proceeds, by borrowing cultures and through the inventions of its own geniuses, until it wears a complexity of civilisation which fits the educable limits of its mental capacity as a man is fitted by the clothes that are made for him. If now the support of civilisation—namely the mental capacity of the people—weakens, the social heritage of culture is forced to hold up the people rather than the people the civilisation. Soon there is a badness of fit and a tendency of the garment of civilisation to fall away altogether. The symptoms of that stage deserves thorough sociological study; if only because we may soon need to diagnose them in ourselves.

If the present decline of I.Q. continues for some decades many sound social measures² and attitudes to which we should now be progressing are doomed to take root with difficulty or not at all. Possibly the eugenic organisation of society will be one of these lost ideas; certainly the notion and practice of democracy, of government responsive to intelligent public opinion, must give way to less happy forms of authority if

¹ The better utilisation of the good intelligence of the less well-to-do, through the provision of opportunity for social success (discussed under education, p. 48), may have a very definite effect on the character of the class struggle, if the latter persists on its present lines. A lower class impoverished of ability through the educational ladder, will have still less success in defending itself against oppression. The resulting additional pressure from which it would suffer would add greatly to the bitterness of the resulting upheaval should the point of revolution be reached through selfishness and stupidity in the upper group.

² A recent important social reform publication, *The Next Five Years*, by a collection of distinguished authors, has not a word to say about biological problems, a fact which has not escaped a well-deserved criticism by the President of the Royal College of Physicians.

the landslide of intelligence continues. For democracy is only just practicable at the level of intelligence we now possess.¹ In addition to a minimum average level successful democracy demands that the "scatter" of intelligence shall not be too great for sympathy of aim and method to exist throughout the group. The rise of a numerous population just above the mental defective level is going to create mental distance between sections of the population. Democracy is a necessary condition of evolution at a certain level of intelligence: we can best fight for it by lifting our population back to that level. The progressive movements of to-day are businesses trying to start on insufficient capital—the capital of racial intelligence.

(e) *On Wealth and Employment*

It happens that in the interests of the newly developed applied science of vocational guidance many intelligence test surveys have been made to discover how the average intelligence of workers in one occupation compares with that in others. The diagram below shews the intelligence levels obtained in a survey in this country.

Though there is a good deal of overlap between occupations, the more complex occupations and those leading to greater earning capacity shew decidedly higher average intelligence. The same order is found for the children of people in these occupational groups, so we are dealing with a transmitted capacity.² Such findings lead psychologists to the conclusion that there is a significant positive correlation between inborn capacity and social status or wealth (earning capacity). Naturally such a correlation does not mean that families of unutterable fools may not (for a generation or so) be wealthy or that men of great ability, if they choose to do work which the community needs but does not pay for, may not starve. Opportunity, differences of goal

¹ See *Democracy and the Human Equation*.

² Dr. E. Lawrence, *An Investigation of the Relations of Inheritance and Intelligence*.

and variations of character and energy also throw out the correlation with intelligence. A mental defective may beat a genius at a game of draughts if the genius is thinking of something quite different all the time, and many of our best brains have no time for the game of social competition. A considerable number of very able people are willing, granted a pittance and the minimum of comfort, to devote themselves to social, religious,

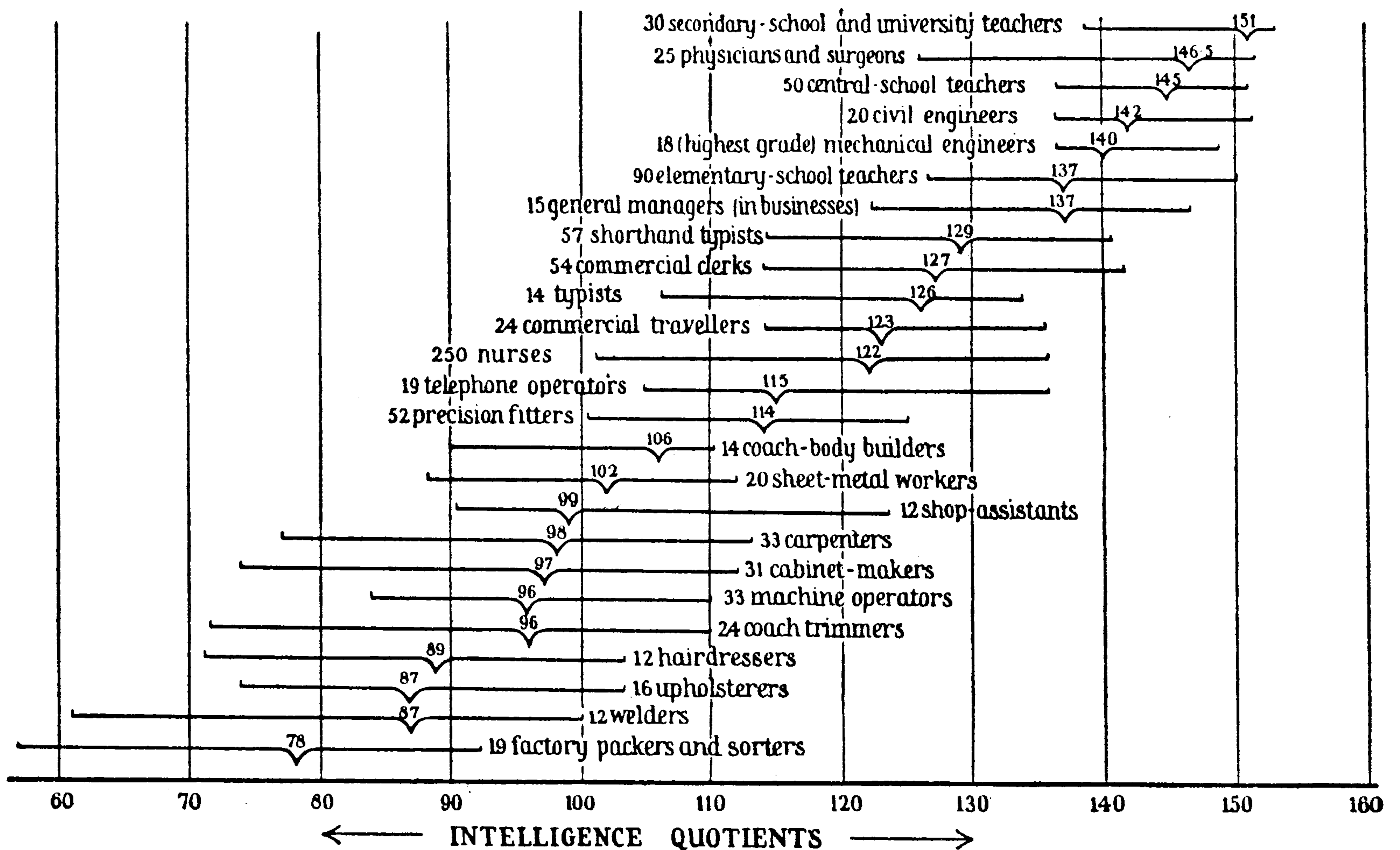


DIAGRAM V.—Intelligence Levels in Various Occupations.

The central figure on each line indicates the average LQ. for the sample taken. The length of the line subtends the scatter of LQ. of the middle 50 per cent. in that Occupation.

artistic and scientific endeavours; whilst less-developed characters of lower intelligence accumulate far greater wealth through an obsessional concentration on it, derived from a neurotic sense of insecurity, a misdirected urge to power or the smart of inferiority. Consequently the correlation of capability and earnings is much closer below a salary of, say, £240 a year than above; for above that figure the better abilities often set out on quite other goals than earning money. Perhaps one could express the connection from another aspect by saying that though

the mental defective is always of miserable earning capacity the person of miserable earning capacity is not always mentally defective.

I stress this contingent nature of the correlation because the sober statement that the poor are also on an average of lesser mental capacity has aroused a storm of political feelings, even among some scientists from whom one hoped better things. If political views cannot be squared with this fact it should be so much the worse for the political views,¹ or the rooted habits of thought which accompany them. To say that the chronically and abjectly poor are on an average significantly below the mental capacity of self-supporting citizens, and that this low capacity is one cause of their condition, is surely no condemnation. On the contrary, it is clear that the person born with sub-average intelligence deserves special assistance and consideration. He should be given financial help, but he should not be allowed to breed excessively when the community already labours under an excess of low intelligence. We should support the grandchildren of the defectives supported by our grandfathers, but we should have the sense to give our own grandchildren a less-burdened existence.

Statistical studies have led some sociologists to believe that the capacity to create wealth is inherited so that a community bred from the wealthy would be wealthy

¹ In fairness to the reader, who knows that no book is altogether unaffected by the antecedent sentiments of the writer, I will put my cards on the table here and admit that my starting-point is that of the average socialist. As I have pointed out in *Psychology and Social Progress*, however, no political party has views responding to the true complexity of the subject, indeed no politician as yet appears to know anything at all about social biology, and much politics remains a thinly disguised battle of the "haves" and the "have-nots." Here, I think, the social psychologist would conclude that though the "haves" possess the higher average intelligence, the "have-nots" frequently acquire sounder attitudes, because their discomfort inclines them to desire change (which is often progress) and because they are less cushioned from the realities of social life. Because a man of means does nothing but play golf all his life it must not be assumed that he has no brains. Given a proper education and sufficient motive he might yet reveal to the layman the inheritable mental capacity which the psychologist's tests indicate that he generally possesses.

and one bred from the poverty stricken would as a whole be poverty stricken. (Notice in this respect the Jews and the Arabs in Palestine at the present time.) This may be somewhat far-fetched—I have insufficient evidence to judge the statistics—but there can be no denying that the real wealth of a community is determined, apart from natural resources, by its average intelligence. And a people of sufficient intelligence will make “natural resources” out of almost anything.

A Faraday, a Pasteur and the lesser but still unusually good mental capacities of big business organisers of the Ford type, actually increase the real wealth of the community and probably only use up on themselves a fraction of the wealth they create. Whatever we may feel about the matter socially, the I.Q. of 150 is worth to the community many times the earning capacity of the I.Q. of 80, though both may be giving of their best.

If this reasoning is correct in essentials it should at all events be possible to eliminate poverty—dire, shiftless, grinding poverty—in a generation by removing from the race those strains of very low mental capacity which are unsuited to civilised life, which are incapable of creating sufficient wealth to keep themselves on the same standard of living as the majority and which create social problems by the temptation to exploitation which they present to slightly more able or cunning types. This is the only way in which poverty will ever be eradicated, yet squalid poverty is still with us in this advanced age because the fundamental biological treatment has never been tried, though every other nostrum from religious charities to Mr. Upton Sinclair’s “Epic” Californian plan receives enthusiastic support from innumerable sentimentalists.

Admittedly, poverty can be temporarily bought off, but because the birth rate of the social problem group is unlimited it returns like a blackmailer, always demanding more. The limit of insanity is reached when staid welfare workers begin to write, “Family endowment opens perhaps the shortest avenue of approach to the

solution of the problem of poverty." In this indiscriminate form it is also the shortest avenue to complete bankruptcy, moral, economic and biological. Moral bankruptcy is in fact already with us when such reasoning spreads from the imbecile sections of the press to the writings of those who are supposed to have studied the question. Because of the moral confusion which seems to run through all discussions of this subject nowadays, and paralyses a great deal of effort, I think no apology is necessary for devoting a special footnote to a brief but fundamental discussion of the revised standards of good and evil to which science leads. Indeed, I would not hesitate to consider this the most important footnote in the book.¹

¹ NOTE ON CLARIFICATION OF MORAL ISSUES

Effort in eugenics and all other vital matters to-day is paralysed because moral conceptions are in the melting pot. Public morals in all common matters are probably better than they have ever been, but the bedrock principles, to which it is necessary to turn in the greater enterprises of society, are hopelessly lost.

The morals of the average man are a farrago of Christianity, Patriotism, stern tribal domestic morals combined with Platonism, Kantian categorical imperatives and Benthamite Utilitarianism. With this uncomfortable mess in his head it is not surprising that he feels safest in doing nothing and insisting only on the negative virtues. That the average man's morals should be no more than a set of half-unconscious habits and attitudes is neither new nor dangerous, but that educated people and whole nations should have no sure touchstone of clearly enunciated principles is the worst calamity that could befall a civilisation to which science has given great opportunities.

I agree entirely with Professor Ginsberg that the philosophers of to-day have badly defaulted, and in my *Psychology and Social Progress* I have ventured an analysis of moral principles, an extremely brief outline of which can be set out here.

My starting-point is that morality is a branch of natural science, in fact of the biology and the mental hygiene of human societies. My basic assumption is that evolution towards fuller life and power is the ultimate good, and that by the nature of living matter we are incapable of substituting any other, however much our conscious minds may at times, as in suicide, deceive us.

Since man is only fully man when in society, evolution must proceed by natural selection acting upon groups, i.e. directed to the improvement of groups as such. This brings into existence the first derived morality from the basic "survival of the fittest" principle, namely that the individual lives for the others in his group, in order that the fittest group may survive. Christianity, Mohammedanism, etc., are at first sight crowning expressions of this long-developed group ethics which bids the individual sink himself in the

group and love his own fellows more than himself (Patriotism), but expressions which in their expansiveness have broken the boundaries of race and so lost the whole object of their existence in the scheme of survivalist ethics. The logical German,* for this reason, has recently grown suspicious of Christianity, returning to Hegel and the super-moral state; but the Englishman continues to be a not very logical Christian with a sneaking regard for patriotism and an hypocrisy which enables him to reconcile the two.

Now a logical mind is an admirable thing and more useful than the intuitive one in most well-defined situations; but it fails relative to the intuitive mind when it uses its logic on incomplete premises—and in complex issues such as morals the premises are likely to be incomplete because some of them are very subtle psychological matters which a physical scientist might stare at indefinitely without seeing.

For that reason I say that Christianity is, *at first sight*, ruining the whole purpose of group survival ethics by extending love to all humanity. For, on closer analysis, we realise that evolution can proceed under the ægis of love as easily as that of hate; if that love is the love of the best.† With such love the less capable men and races vanish because they can extinguish themselves in the service of others whose greater nobility is no longer in doubt. And even when it is in doubt to both parties to the competition, that competition can be carried on with a desire only for the best to win. Hatred and bloodshed may be a necessary part of the scheme until man becomes self-conscious and clear about his moral purpose; but after that realisation they vanish. To-day the life experiment with types and communities could be carried out without war and through the medium of economic and cultural emulation. Thus there is no reason for man to suppress as evil either his self-assertion or even his pugnacity; but to exercise them freely within a greater law of love, which urges him to avoid cruelty and suffering, and gives him joy in the outcome of the rivalry, whatever it may be.

It is interesting to notice how this conception is intuitively approached by different minds in different ways. Christianity is its clearest and yet most unbalanced expression: it is expressed tersely in the English notion of “fair play,” whilst the scheme of things is fully apprehended, even with minds still at the level of physical force, by the poet who conceives morality as being:

“To set the cause above renown,
To love the game beyond the prize,
To honour, while you strike him down,
The foe that comes with fearless eyes.”

If, however, the aim of morality is the survival and expansion of groups

* I do not suggest that the difference is entirely one of intellectual position. Different systems suit different temperaments. Some prefer an ethics in which every person looks after another, some a more Spartan ethics in which the individual looks after himself. Both pity and self-respect and many other systems of individual inter-relation will work and can cement individuals into a society; just as square, triangular, or oblong bricks can be cemented together to make a wall if they are all of the same kind. Experience alone can shew what kind of frontiers between one individual and another make the best society: Christian unity in God, communist brotherhood, the pride of chivalry, the austerity of Roman duty, Buddhist self-surrender, these are some of the attitudes which can make a community work, for a considerable time.

† This is the same as saying the love of God and is very different from an indiscriminate love of fellow-men, as Chesterton scornfully reminds us in his poem “Abou Ben Adhem.”

capable of producing the finest life, surely, one may argue, it is a matter of indifference from the standpoint of science whether the elimination of the less fit occurs through love or, with cruelty, through hate? This is where logic presumptuously works on insufficient facts: I would argue firstly the psychological certainty that men can only give of their best in a world of security, which respects their right to live and, secondly, more speculatively, that the sensitiveness of nervous organisation which is going to make possible the next step in evolution, can only be evolved in, because it is only in sympathy with, conditions of universal love and human solidarity. For this reason Christianity, as love of the best in man, is not an obstacle to evolution but a condition of it; though a sentimental and indulgent pseudo-Christianity, which favours a breakdown of all group emulation and encourages the survival of the inferior at the expense of the more able, is the worst perversion of evolution conceivable. We must have, in place of ruthless nationalism, "a scheme of planned and agreed divergence in co-operative competition" (*Psychology and Social Progress*) under international law.

What are the implications of such a derivation of moral law for eugenics? The age-old plan has been for children to be begotten excessively, in lust, and killed off in misery. Eugenics for the first time in history gives man the possibility of substituting for the reckless, cruel and wasteful methods of Nature the humane control of kindness and reason. For firstly he can anticipate to some extent the direction of evolution—as by avoiding the birth of physically defective and mentally sub-normal beings—and secondly, where he can not anticipate, he proceeds through experimental groups, the success of which should determine their birth rates. In both cases eugenics makes possible for the first time a thoroughly Christian treatment of the defective: he can be given the best because it will not mean a greater perpetuation of his kind, as it would where no control of births existed.

A society which does not clearly perceive that its Christianity, Moham-medanism, etc., is not merely a derivative of a greater evolutionary ethics is doomed to unlimited suffering and frustration. To increase the medical and social services of to-day without at the same time demanding restriction of births by those who use them most is as damnable a piece of wickedness as has ever been condemned by moral law. We shall pay for such indulgence in the long run by being swept away by a people who have not allowed such sentimentality to dominate their thought. For these sins our children pay—and should not Christianity consider the happiness of the unborn?

At the present moment this pseudo-Christian perversion of morality has spread like a pall over much of our popular thought. It is hard to pick up a newspaper * without finding the description of some rascal who has never done a day's work and who demands special consideration for his plight because of his twelve children. The local council should first be pilloried for cruelty to the wife, failing to supply a birth-control clinic. And after the birth of the first three children the husband should have been imprisoned for bringing into the world children beyond his means and, in all probability, below average intelligence.

Among the writings of the "intelligentsia" this moribund morality shews

* A few hours after writing these words I find great indignation expressed in the newspapers over the following case: "Eight children, all under twelve; no work for twelve years; and, after paying 11s. rent and a shilling towards arrears, 34s. to feed and clothe ten people every week."

itself in passionate appeals for the equal treatment of unequals and in attempts to dispel the notion of human worth and the different worths of different beings (as if a motorist in an unavoidable choice would hesitate to run over a dog rather than a child, or a feeble minded in preference to a healthy, bright child). It occurs in talk of the "irrationality" of war or of scarcity where plenty might be given (we can, as I have argued, avoid both by eugenics, but they were and may be again, desirable instruments of evolution, if we fail to discipline ourselves to controlled evolution). The "irrationality" is in the minds of the writers who cannot conceive that there are natures which genuinely desire other goals than peace and comfort. By evolutionary morals the substitution of Italian culture for Abyssinian is good. The way in which it has been done is bad, because it is on the old level of physical violence. But if Italy has no hypocritical objection to being displaced in turn by similar methods we cannot grumble at her morals: they may be old-fashioned, but they are not as futile as the utterly perverse morality which assumes that evolution has finished and that goodness consists in the maintenance of the *status quo* for evermore.

Of all the complacent, unscientific thinking of our age the worst is that which treats the slum problem as if it were a question of bricks and mortar. Dr. J. J. Mallon writes, in support of further subsidised building, and admitting that "the Government has not been inactive or the Acts ungenerous":

"Since the war 3,000,000 dwellings—approximately one-third of all the inhabited dwellings in the country—have been erected. But slums remain and many are more acutely overcrowded than in 1920. . . . Surely we shall soon have done with slums and overcrowding! There is unhappily no certainty about it. Like the mills of God, the Acts work slowly. But they do not grind the rents sufficiently small!"

Unlike the mills of God they do not grind to the tune of the parable of the talents, but to a crazy modern song of indulgence that has disaster at the end of it. It has taken a bishop to remind us that "the slumite is a far worse problem than the slum," but the fact should be deducible easily enough from the fact that hundreds of well-built spacious streets in London and other cities are now slums.¹

¹ In Hull (Hull Community Council Report on Local Housing Conditions) fine old Georgian houses, once the homes of merchant kings, are now neglected slums, housing 35 people in ten rooms, and, in one instance, 44 people in nine rooms.

About £500,000,000 a year is now being spent on Social Services. This would not be excessive, indeed it would not be enough, if it were spent on healthy and competent stocks, on the workers and the skilled workers who are an asset to the state and on those among them who are temporarily unfortunate, but the evidence points to much of it being sunk in the pauperisation and multiplication of a section of the community least capable of acquiring social eugenic standards for itself and its children. To the people who want the benefits of civilisation without its restraints, the community will have to say "No public assistance without control of birth rates."¹ Only by thus facing up to the principle that if the state is to feed, educate and support children, it has a right to control their production, will the community put an end to the grip of this social black-mailer.

Unemployment—persistent, chronic unemployment—which, incidentally, is not a post-war problem, but dates from about the same period as the dysgenic birth rate, has been debated from every possible political and economic angle. The economists only consider men in their arguments as units—"economic men"; indeed if the population were changed overnight into a collection of apes many of these advanced thinkers would continue with their economic explanations quite undisturbed. It is this blind spot which prevents the economist giving any true account or solution of unemployment. For it is essentially a psychological problem.

¹ Popenhoe, P., "Fecundity of Families dependent on Public Charity," *Amer. J. Sociol.*, 1934, No. 40, studied a sample of 504 families who had been dependent for years on public relief. He found the families averaged five children and that a third of the total number had been born since the families became dependent. Three or more welfare agencies were aiding each family in 80 per cent of the cases. Most of the wives were still young enough to bear more children at the public expense.

A supplementary study in *Eugenic News*, 1934, No. 19, describes four generations in an almshouse at the same time. It was a border-line feeble-minded stock with a high illegitimacy rate. The writer concludes, "Permanent custody in almshouses, or release only after eugenical sterilisation, seems demanded" if the community is to cope with the problem at all.

We have seen that mental capacity varies with occupation and social status. In testing a number of unemployed I found only three above average intelligence, whilst the average for the group was below that of any occupational group. With a sufficiently large sample doubtless one would find many men of outstanding ability, but on the whole there can be no doubt that their mental capacity is below that of the employed. These unfortunate men are doomed to a miserable existence so long as society teaches that it is good to work and at the same time fails to co-ordinate its breeding rate to the work needs of the community. For in a progressive civilisation there is a demand for more men of high educable capacity and fewer of limited mentality.

In the small town where I write these lines there is always a crowd of youths and men sunning themselves on the bridge, idly waiting for a street accident to stir their interest; but the three surgeons at the local hospital are men overworked to the point of ill-health. Thus does a stupid system consume the very types of which it is already short.

A consideration of this matter leads us to some far-reaching principles. In the earlier diagrams we have seen the distribution frequencies of various kinds of inborn intelligence in our population. The typical curve, fitting the histograms from which it is derived, is shewn at (1) in Diagram VI. But there must also be a curve shewing the *demand* in industry and social life for various magnitudes of intelligence. Actually the demand, at any rate in civilised countries, is rather for various types of educated adult, but the level of complexity of occupation to which a person can be educated, granted the best educational machinery, is determined by innate capacity. You cannot make a research chemist or a designer of bridges out of an I.Q. of 100, a stenographer out of a girl of I.Q. 80, or a successful cobbler out of a mental defective of I.Q. 65.

Though the curve of supply of intelligence (1) is well known, considerable research needs to be and should

be done to determine the exact shape of the curve of demand ((2) in Diagram VI).

Originally the two curves must have been identical, for a tribe could only invent occupations of a complexity with which it could adequately cope. But in the course of time the curves may diverge through (a) alteration in the curve of supply through the developing of a greater breeding rate at one level than another, producing too many high or too many low intelligences to be absorbed in the type of culture that has been built up. (b) Alterations in the curve of demand through, for example, the assiduous building up of sciences by an able minority, and the accumulation of accidental discoveries and techniques, creating need for skilled technicians; or, contrariwise, the reorganisations of social conditions making the absorption of more low intelligences possible.

On the whole it seems likely that commercial and industrial life makes an increasing demand for moderately high and high intelligences, whilst finding less use for large numbers of a relatively untrainable type.¹ Consequently I would suggest that the speculative 'curve of demand' in Diagram VI is a rough approximation to the truth.

Now, apart from certain minor effects,² the earning capacity of an individual will be determined by the heights of the two curves at his level of intelligence. A man of I.Q. 75, at A in Diagram VI, finds very few jobs at which such a low I.Q. could be useful or safe; the demand is very small, but the supply is great; consequently the wage he would be offered is an extremely

¹ The substitution of a steam shovel for a dozen or more pick and shovel workers means the employment of a skilled mechanic, a designer and one or two engineers, practically all needing greater mental capacity than the original dozen. The curve of demand obviously is in continual slight flux. An earthquake, for example, would create, in the reconstruction entailed, a large demand at a lower level of mental capacity than is usual in the stable proceedings of civilised advance.

² e.g. snobbery, making a man work as a clerk at 35s. a week rather than as a labourer at £3; ideals of service, making individuals take much lower earnings than their abilities could win; chance differences of opportunity, etc.

small one. At B, I.Q. 105, supply and demand are about equal, so a reasonable working wage may be

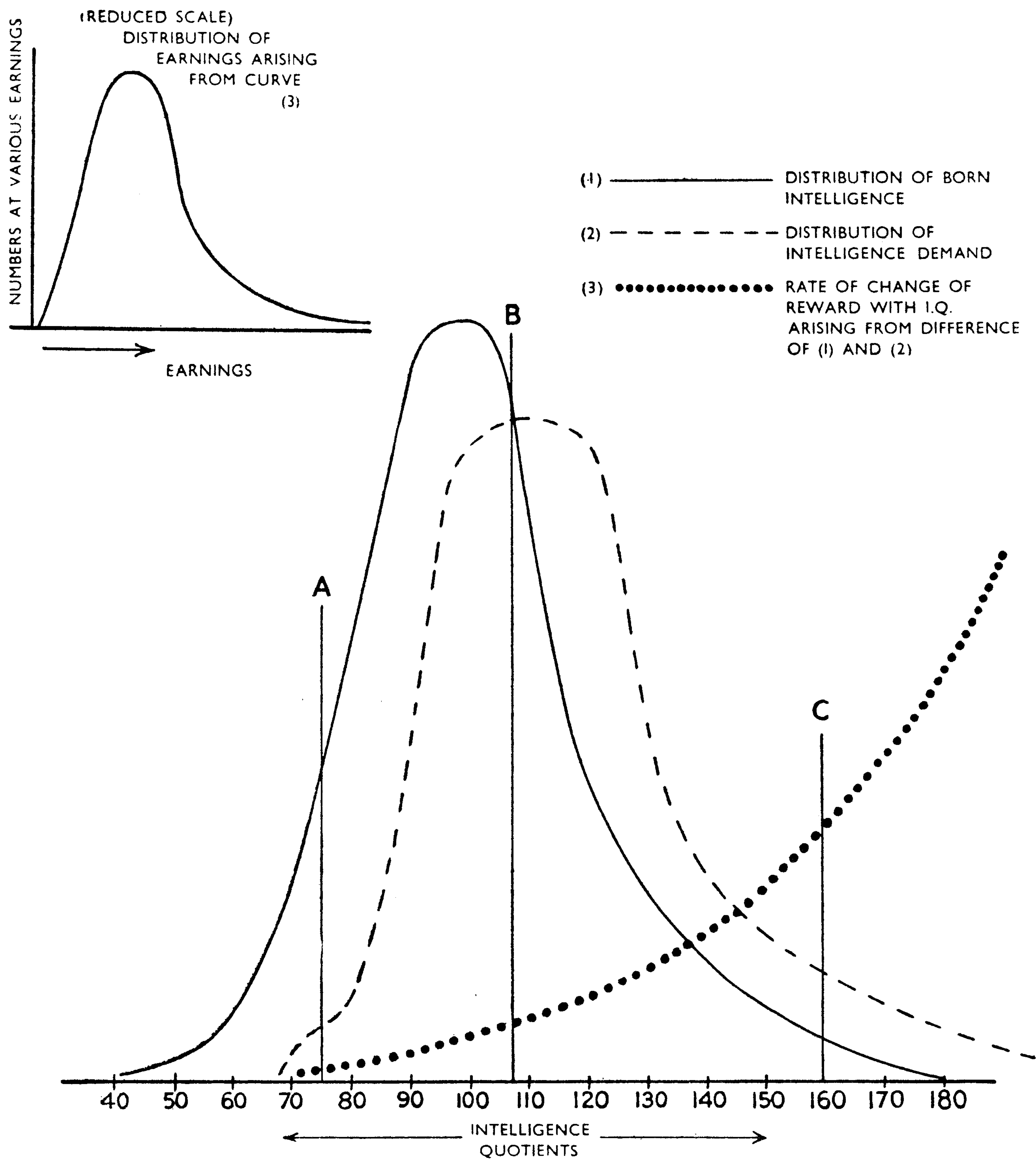


DIAGRAM VI.

A at I.Q. 75 supply greatly in excess of demand, therefore negligible earning power.
 B at I.Q. 108 supply equal demand, therefore normal earning power.
 C at I.Q. 160 demand greatly in excess of supply, therefore disproportionate earning power.

expected. At C, I.Q. 160, which betokens first-class organising ability, or ability which might make a very

able engineer or barrister, the demand is about twice as great as the supply and the earning capacity is consequently great. Of very high abilities, which might lead society out of its difficulties in this very complex age, there is a distinct lack. Curve (3), the curve of value to society and, in ideal conditions, the curve of rewards, is a function of the discrepancy between (1) and (2). It would give a distribution of earnings as in curve (4) which is substantially the same as that which is actually found by economists.

Though it may seem the rankest injustice that one man should get a few shillings for a day's hard physical labour whilst another takes two guineas for half an hour required to set a bone in someone's foot, the wage rates are the symptoms of Nature's need, i.e. of the present intelligence demands in the social organisation of the species *homo sapiens*. If there were as many individuals capable of being trained to be good doctors as there are fit to be trained to be good bus-drivers it is clear that, under unconstrained *laissez-faire* conditions, the bus-driver would earn as much as the doctor, or a little more, to balance the prestige gained in the latter's occupation. Such conditions have held at special times, as when stevedores in New York were earning more than the average solicitor.

In the interests of immediate human happiness and solidarity we may, through trade unions and through charity, artificially hide these valuable indications of social, biological needs; but the dislocation will now appear in a new set of symptoms of which unemployment is the chief. If this argument is true and the curves of Diagram VI are approximately correct the greatest incidence of very low wages—or, alternatively, reasonable wages for the few and unemployment of the many—should be in the lowest section of the mental capacity curve. Direct testing of unemployed suggests this, but the present survey also provides evidence through studying the intelligence level of children of unemployed. In Diagram VII the distribution of intelligence of children

of unemployed¹ is shewn. Only a very small fraction are of average intelligence or above,² whilst if these numbers are expressed as percentages of the total population found at each intelligence level, the percentage increases

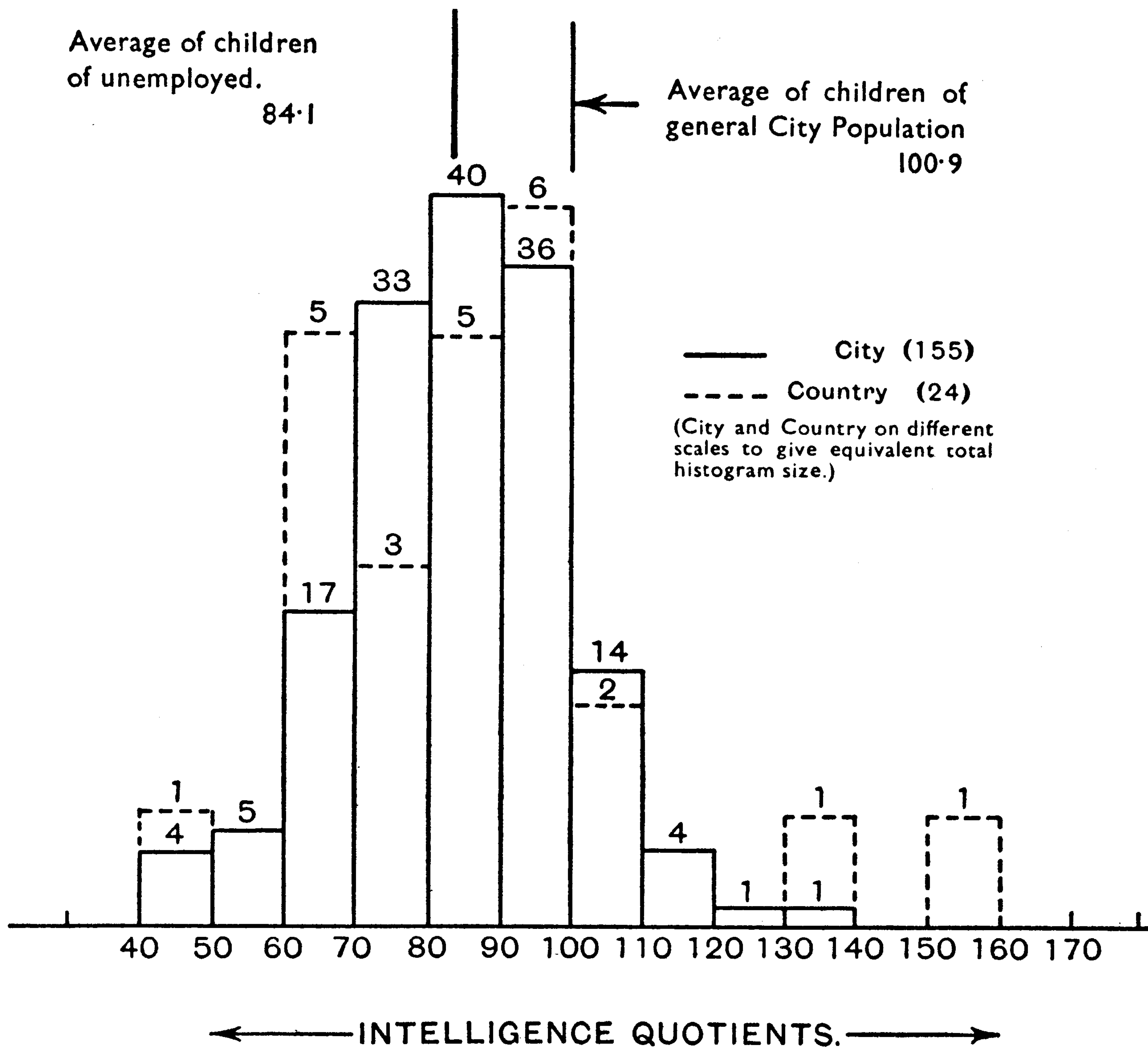


DIAGRAM VII.—Distribution of Intelligence of Children of Unemployed.

persistently as we go downwards. If at these levels fewer people, by the requisite amount, were born in the next generation, the problem of unemployment would vanish.

¹ These are systematically unemployed and not sufferers from temporary economic depression; for both these areas are relatively prosperous ones (Leicester and rural Devon), Leicester having only 9,000 unemployed in a population of 260,000 (1936).

² Owing to regression to the mean, moreover, the intelligence distribution of the fathers would be distinctly lower than that of the children shewn here.

It is scarcely less certain that it would vanish with equal completeness if there were an increase in the numbers born at higher levels of intelligence—on the assumption that the creation of employment require a right proportion of high to low intelligences, as the digestion of fats requires an adequate proportion of carbohydrates. This mal-formation of the intelligence supply curve, rather than any actual overpopulation, is the biological root of systematic unemployment.¹

I am not suggesting, however, that we should let the constitution of the race be dictated by the needs of industry: the race worth anything at all has greater aims

¹ The two curves—of supply and of demand—are, incidentally, graphic functions of the two contending principles which I have discussed in the section on morality (p. 65). The survival rate is now under the influence only of a pseudo-Christian principle of sentimental *laissez-faire* and indulgence. But the curve of demand is affected by all those psychological forces of assertion—originally expressed in an aggression that reduced the survival rate of the unintelligent below that of the intelligent—which ensured the success of evolution. These, like any psychological drives, may be denied direct expression but cannot be destroyed. They achieve a subtle, indirect expression in society in that the more intelligent direct their aggressions against nature and create a complex environment only suitable for intelligent people to live in. We can progressively eliminate the cruelty so long associated with this assertion only in so far as we recognise this upward striving, this struggle for the supremacy of one's own biological type, as intrinsically good and as a thing to be given organised expression in civilised society, in more beautiful and less ruthless forms. The result of this indirect expression is that the unfit are no longer killed off, but they are thrust into unemployment and kept on a miserable scale of living. That may be an advance; but a greater advance would be to give the unemployed a good standard of living and a sense of the goodwill of the community, whilst insisting that persons in this intelligence range do not breed.

Bertrand Russell writes (*In Praise of Idleness*): "I have been informed repeatedly, by persons who consider themselves hard-headed realists, that men in business normally desire to grow rich. . . . If business men really wished to grow rich more ardently than they wish to keep others poor, the world would quickly become a paradise." I think Russell is entirely correct in thus describing the relativity element in the nature of the self-assertive instinct—men put attainment values before comfort—but I think he is wrong in condemning it; for until we have faced up to the evolutionary principle and created the eugenic machinery to ensure its smooth continuance in civilised life, we cannot throw away these more primitive and objectionable mechanisms—to do so would be to throw away the baby with the bath water. This is the answer to the all too facile talk about the illogicality of overproduction and underconsumption (through unemployment) co-existing. They are part of the machinery of evolution which has nobler goals than that of comfort.

than material production. In the first place industry maintains a "reserve of unemployed" in addition to the permanently unemployable¹ I have been discussing. In a rationally organised industry this could be cut down to a minimum. Some employers—a stupid minority, I believe—welcome a large reserve of unskilled labour for purely selfish reasons and are not likely to co-operate in efforts to reduce the birth rate of the sub-intelligent.

One small employer complacently informed me that he thought it was a good thing to breed a sub-race for the hewing of wood and the drawing of water. In this encouragement of the present decay I think he is wrong on all counts. Firstly, an excess will not lower wages, for the trade unions will prevent that. It will create rather an increase of unemployment to be paid for by the employer and the rest of the community. Secondly, the person of limited intelligence is not so cheap an employee as he at first appears. His accident proneness is high and he cannot adapt himself to changes in method. Thirdly, too easy a supply of persons fitted for the simplest and most monotonous repetitive tasks causes little demand for the invention of machinery which might in the end prove cheaper. Lastly—and most to the point—no human being has a natural right to breed and keep in captivity other human beings for utilitarian purposes, like domestic cattle. It is immoral if only because it is revolting to all æsthetic sense.

The curve of demand by which the curve of supply must be judged is that built upon the intelligence requirements of full citizenship. And one of the conditions of good citizenship is that no man shall feel too great a gulf

¹ The Ministry of Labour (Report on Industrial History of 10,000 Claimants to Unemployment Benefit) gives only 3 per cent as unemployable, another 4 per cent as never employed and 21 per cent as not steadily employed in normal times, but this assumes any able-bodied person, whatever his mental capacity, is employable, which in modern civilisation is not true, and it takes no count of those unemployed who are not fortunate enough to be claimants to unemployment benefit.

separating him constitutionally from any other citizen. A democratic citizenship requires men to have the ability to understand social and political issues to the extent that the polling booth may not be a danger to the country. But full and enjoyable participation in the life that is now possible for a modern state requires higher capacity than is dictated by such a minimum danger level. Unimaginative industry may demand some slaves having border-line feeble-mindedness to push nobs and turn cranks, but social life, which shews little demand below an I.Q. of about 80, should not condone the criminal intentions or thoughtless greed of industry.

Without prejudice to the problem of the eugenic effects of property itself, which some socialist economists claim to have been the causes of wrecked empires, we can surely predict that under any system, the abolition of poverty and unemployment and the increase of real wealth is permanently realisable only when poverty is treated as a psycho-biological problem.

(f) *On National Security*

I have pointed out earlier that nations, like buildings in a modern city, have got to grow upwards rather than outwards, and that expansion of population at a low level of mental capacity is the surest single factor leading to war¹ (p. 51); for even a rat will fight fiercely, but only a man can be counted on to construct a civilisation.

Every relapse of intelligence foreshadows in history a regression to the more primitive machinery of evolution which is war. If, through carelessness and moral self-indulgence in society, we do not stop the flood of inferi-

¹ Mussolini (speech reported in "A Short History of the Abyssinian Question," *British Italian Bulletin*) innocently prefaces his demand for expansion by saying, "The Italians are a people for ever growing in number. Italy produces more children than coal, iron or wheat." He omits to add that their production makes no demands on intelligence or character, whereas the production of the other things is peculiar to civilised human beings.

ority ourselves, the machine-guns of an enemy will stop it for us.¹ But the flower of the nation will go down with it: war has been a wickedly wasteful tool of evolution—and to-day it may be a tool no longer.

Although a disproportionate swelling of the population at lower capacity levels tends to a solution of tension through physical warfare, it by no means favours a successful outcome of the war once it has begun. In hand-to-hand fighting and to some extent in static trench warfare, victory may be only a matter of the arithmetic of numbers. (I am supposing for the moment equality of the higher intelligences of the strategists on each side, and considering only the effects of differences of average intelligence of the body of the army.) But there are strong arguments, both in theory and in the verdict of experience, for believing that in modern mechanised warfare and in older warfare where the management of complex contrivances such as ships was concerned, the victory would go to the more intelligent though they were fewer in numbers.

This applies most clearly to the fighting services, for war is a great test of intelligence, making demands in its surprise situations upon the very essence of untrainable mental capacity; but it applies also to the non-combatants, who have intelligently to construct the engines of war.² In a war of tanks, submarines and large fleets of aeroplanes, victory to the nation with the larger percentage of high I.Q.'s is even more certain,

¹ One seems to hear the lines of Siegfried Sassoon :

“Lines of grey, muttering faces, masked with fear,
They leave their trenches, going over the top,
While time ticks blank and busy on their wrists,
And hope, with furtive eyes and grappling fists,
Flounders in mud. O Jesu, make it stop!”

Thus far the incisive pity of the poet: the scientist, analysing in the cold light of natural consequences, knows that the thing is only to be stopped by some very realistic thinking and acting on birth rate questions.

² No small part of the victory of the English against the Spanish Armada was due to the less conservative and more intelligently adapted designs adopted by their shipwrights, having regard to sailing capacity and the new use of artillery.

for the men fit to handle these instruments successfully are not found every day.¹

I will not labour the matter further, but will ask which of the fighting services has given any thought at all to the origin of its recruits? The Air Force, even in peace time, kills off about a hundred of the most all-round mentally and physically fit young men in the country, men such as will only be found in the proportion of about 1 in 50 of the general population; and it discourages the remainder from marrying. By any long-distance view of national security, reckless folly could go no further.

For that matter there is little doubt, either from the verdict of history or of sociology,² that modern war itself is highly dysgenic, doing damage to the breed that is often irreparable under ordinary conditions. Because of the bitter losses in the last war, which undermined the genetic constitution of the race, we ought to be thinking especially hard to-day of eugenic measures. Those who do not see the necessity of improving the race ought at least to be concerned to repair it.

The future is going to see a far more effective use, both in peace and war, of the biological reserves of intelligence which we possess. (The Americans sorted their recruits by intelligence tests: we used some of the best brains from civilian life to stop bullets in front-line trenches.) Now a finely organised civilisation, in which

¹ Admiral S. S. Hall writes (a propos of submarines, in *By Guess and by God*, p. xii), emphasising "the overwhelming importance in submarine matters of the character and abilities of those who command them. Germany had some four hundred submarine captains during the war, but over sixty per cent of the damage they did * was accomplished by but twenty-two of these four hundred officers. The one and great difficulty in submarine warfare is to find a sufficiency of officers . . . who will rise superior to the intricacies of these complicated vessels, who will make their opportunities and take advantage of them. . . ."

² I have examined the evidence pretty fully in *Psychology and Social Progress*. Of course, a war which causes as many casualties among the civilians rejected from recruitment as among the combatants would not, presumably, be so dysgenic.

* Nearly nine million tons of shipping sunk.

every available high intelligence is specialised in some position from which it can have maximum effect, has this disadvantage: that once it is shattered it is not put together again so readily as one less specialised, in which the available intelligence is not used up to the limit. Though we may temporarily meet the decline of intelligence, therefore, by psychological methods of vocational selection and improved organisation, we should give heed that we do so at the expense of making the nation more fragile to the blows of war.

If, through an improving international morality, nations avoid actual war, though not the necessity of keeping up large armaments, we may see a new test of national fitness appearing in which, though no blow is struck, nations will collapse from the internal strain of keeping up the armaments necessary for their security, just as a wrestler, unbeaten by his opponents, may be beaten by disorders of the nutritional and vegetative systems, which become depleted of energy through the overdevelopment of the muscular system. Even without war the old truths hold: the nation which allows an unrestricted breeding of the unfit and a consequent heavy internal expenditure on its welfare and social services will be forced to collapse before or without actual warfare, but by the mere threat of war.

To conclude, I will emphasise three points (1) That the fighting services should be concerned to discover whether their personnel are in fact adequately reproducing their numbers and at rates sufficient to allow for the actuarial estimates of war losses. (2) That history, from Thermopylæ to the Armada, proves that numbers are far less important than natural capability, and that this truth is going to be increasingly apt in the future. (3) That the decline of average I.Q. is the most serious threat to national security. Especially is this true of the decline in the proportion of very high intelligences which should provide the leaders in situations which, more than those of peace, put a premium on natural thinking capacity as distinct from professional training.

(g) On the Advance of Science

Considerably more intelligence is required to discover scientific principles than is needed to use them once discovered. The flourishing state of applied science is therefore no assurance that all is well with scientific progress.

Any close enquiry will show that the number of people responsible for the scientific discoveries which have enriched, safeguarded and extended our lives to-day is astonishingly small—a few thousands out of many, many millions.

Our enquiry has shewn that the loss of intelligence is most marked at the upper peak of the intelligence distribution. This is not surprising for, owing to the poverty of the research worker who works in anything but a well-beaten track, or in applied science, and owing to the complete devotion he needs to give to his work, research workers are about the most infertile section of the community. The causes of the loss of very high I.Q.'s are, of course, more complex than this, for many of them are recruited from parents in that larger section of high, but not rare, intelligence. The results of the diminution of exceptional high I.Q.'s are, however, lamentably clear.

Few things are more provoking to the psychologist, therefore, than the popular assumption that it is only necessary to divert more money to research in any field in order to get more discoveries. A great daily newspaper complacently prophesies in its leading article: "Cancer must and will be crushed, and the front of the disease will one day be crumpled back in one more triumph of the clinic or the laboratory." How reminiscent of the optimistic war-time directions, made by those who knew nothing of the difficulties of the front line, on how to win the war! The good research worker is born, not bought, and though much more money is needed, advances in knowledge on a bold scale will only occur when society takes especial care to see that the birth rate of its preoccupied high intelligence groups is augmented.

It is nevertheless true that at the moment we do not use on research the trained minds we actually possess. It would be possible to name in psychology alone a dozen very able research workers who are compelled to waste their time in lecturing, or practising in psychopathology, on the crude and limited basis of facts so far attained on parsimonious research. If we were relieved, as a nation, of a fraction of the 500,000 mental defectives we now support, these able men, and hundreds more, could be supported in full-time research work. Science is being impoverished of its true rewards by the carelessness of a community which prefers to support half a million dull individuals uselessly on a pittance rather than a thousand brilliant individuals fully in creative labours.

Our population is materially well off beyond the wildest dreams of its ancestors. It works less, eats more, travels comfortably and is dressed and entertained in a manner to awaken the envy of kings of earlier ages. All this comes from no efforts of the population as a whole: it is the work of a minute group of scientific "cranks." Indeed, as a result of our shameless sponging on science, which has resulted in the survival of the defective and the spawning of the sub-average, the population is inferior to its less-pampered ancestors. What will happen, then, when the springs of fresh unearned wealth dry up, as they will tend to do with the dwindling of the highly gifted children?

(h) On Individual Happiness

The unhappiest children I ever see in a psychological clinic are those who, by a combination of excessive hard work and "lucky" accidents, have got a scholarship to a secondary school when their real ability, as analytical tests shew, is quite insufficient for the demands of the secondary school curriculum. These strained, tearful children brought to us as "nervous breakdowns" are the counterparts of the adult melancholiacs, who subject themselves to excruciating tortures of reproach and

remorse for failing to live up to some perfectionist standard of behaviour or attainment.

The person whose constitutional mentality does not fit him to cope with the demands made by civilisation has two alternatives: to accept the standards and become at best a soured ineffective, at worst a neurotic individual, or to reject them and become a ne'er-do-well or a criminal. If the home is an affectionate one, with skilful moral training, he is more likely to develop according to the first alternative.

With a falling average of inborn capacity in the nation, and no relaxation in the standards of civilisation, the nature of the symptoms is going to depend on the effectiveness of the moral forces in society. Under the relatively chaotic moral traditions of "melting-pot" regions, such as Chicago, the flood of low mentality has obviously led to relapses into brutality and barbarism. Italy seems similarly to have favoured a "healthy" recognition of older standards fitted to the real emotional levels attainable by its people. But generally, and especially in this country, there is a tenacity of moral standards which is more likely to produce the first effect—an increase of strained, overtaxed people and a sharp rise in the numbers admitted to mental hospitals. Asceticism, as every psychologist knows, is a valuable element of character which can all too readily become perverted to an end in itself. A misguided impulse to suffer can lead to race deterioration when a healthy revolt would end or mend the decline, demanding, and calling into existence, positive abilities. Our trend at present is towards a race of meek automatons, satisfied with a life from which art and culture, personality and adventure have been squeezed out.

"Merrie England" belonged to an age when the average mental capacity (as in Elizabethan times) was probably rather higher than now and the complexity of civilisation was less. The happiest community is one in which men do their work easily and well with reserves of capacity, which makes for spontaneity and adequacy in

all aspects of their work. One cannot doubt that this is how life was intended to be lived, with a spirit of freedom and adventure, such as characterised it at its peaks, in the glory that was Greece and the high endeavour that was Elizabethan England. But we shall never reach it until we have built the foundation, which is a race of individuals more gifted relative to their environment than we are breeding at present.

Finally, in concluding this chapter it is necessary to emphasise that our study omits all that has to do with physical defect. Although there is some correlation of mental and physical constitution¹ (see p. 31) I should doubt that physique is deteriorating at anything like so rapid a rate as the I.Q., indeed it may be quite stationary. But those who have made competent studies are appalled at the absolute prevalence of physical defect. The army authorities find that out of every nine men examined four are quite unfit, three being described as physical wrecks and one as a chronic invalid. This incidence is believed to date from about the time of the Boer War,² i.e. to correspond with the dysgenic trend. There is little doubt that, as one American writer has said, we have started out on "a biological joy ride with hell at the next turn."

Though some of the changes I have studied in this chapter require a knowledge of psychology in understanding their course, others are of so obvious a nature that I must apologise for setting them down. Yet they are not so obvious that people will act on them.

¹ Particularly in social groups as a whole. In a very thorough intelligence and social survey of the widely varying social groups of New York, J. B. Maller ("Mental Ability and its Relation to Physical Health and Socio-economic Status," *Psychol. Clinic*, 1933, No. 22) found a correlation of 0.5 between the intelligence level of the school (district) and the percentage of pupils in it having physical defects. A positive correlation of the same significant magnitude was found in relating the average mental capacity with the economic status of the neighbourhoods concerned. Mental ability correlated negatively with death rate, infant mortality, birth rate and juvenile delinquency.

² See Report of the Inter-Departmental Committee on Physical Deterioration, 1904, and "Some Causes of Racial Decay," C. J. Bond, C.M.G., F.R.C.S., Eugenics Society Galton Lecture, 1928.

Since the magnitude of the decline cannot be accurately estimated from my research, the exact extent of the consequent changes which I have depicted cannot be exactly predicted. No service is done by exaggerating them or indulging in the prophecies of a scaremonger. Their qualitative nature is almost certainly as I have described; their quantity may be more or less; their gravity lies in that they should come into existence at all.

We have the alternative of drifting through centuries of misery and squalor or of climbing to a new plane of happy and vigorous life, but we shall only do the latter when individual morality or State control frankly extends itself into the rights and duties of procreation. In the next chapter I will deal with the obstructions which hold up that step.

CHAPTER V

THE PRESENT DEADLOCK IN THE WAR AGAINST DULLNESS

I. THE OBSTACLE OF COMPLACENCY ARISING FROM THE ILLUSION OF SUCCESS

IF, dwelling on the implications of the changes just studied, I am compelled to laugh at the environmentalists' hopes of building new Wellsian worlds and intelligent Utopias, or of realising a more liberal and spacious social and intellectual life in the days of the rising generation, it is not because I love these things less ardently than most or doubt that they might be brought immediately to flower in the right biological soil. The examination of these questions which I made in *Psychology and Social Progress* suggests indeed that what might roughly be called the "promising ideas" of to-day—the new worlds for old—lack neither scientific nor moral soundness.

Yet are they mostly vain hopes, already overburdened with fears. Rather than dally with them it would be best to base resolute action on a less happy but more sane expectation of possibilities. For the social architect, as distinct from the more numerous and active class of social jerry-builders, realises that ample time and attention must first be given to building the foundations of progress, which are the biological characteristics, especially the innate mental capacity, of the people. What are the forces which seek to prevent our first attending to this foundation?

First and most overwhelming is the invincible complacency of the common man, arising from the absence of any visible change for the worse in his immediate circumstances. This assured complacency is exceeded in its brutishness only by its prototype, the torpor of the

sun-basking animal who has no thought of winter. Admittedly the signs are hidden unless one searches with the diagnostic insight of science. Education is mainly to blame; for by its still-increasing efficiency it more than hides the decline in natural intelligence, as a liberal coat of tar will hide and to some extent heal the cracks in a ship's planking. A cynic has defined education as that which enables a man to get along without using his intelligence. Like most cynical observations it is a half-truth; for situations arise in the life of any moving and adventurous community for which education cannot prepare anyone. Thus by our lack of care for the inborn qualities of the people we put ourselves in the precarious position in which a generation's failure of education, through a temporary collapse of civilisation from warfare or economic accidents, would reduce us to the behaviour level of a den of wild animals.

Wealth, born of a cheated science, and providing for the lucky citizen of to-day a hitherto-unknown standard of material well-being, similarly hides from us any suggestion of diminishing competence in handling our affairs. A trained psychological observer, weighing the originality manifested in various inventions and the magnitude of the strides made in social thought, might detect that the crescendo of improvement which so impressed, for example, Macaulay in the last century has already faltered. Incidentally it is unfortunate that Macaulay's preoccupation with material improvement, quite natural and healthy enough in his age, should only now have reached full expression in the popular press, precisely when the centre of importance has in fact shifted from the mechanical sciences to biological matters and particularly to the study of mind.

The present-day scientist's delving into social problems, which leads him to be suspicious of the average man's cry of "All's well," uttered at moments of prosperity, brings him into line with the poet and the historian who have long recognised sinister lights in the gleaming gold of lands "where wealth accumulates

and men decay." Three hundred years before Rome fell like a house of cards at the approach of the Hun, Juvenal foresaw and satirised—in vain—the human decay peeping through the over-ripe prosperity of his age. In a review, of rare sanity and depth, of the causes of racial decay,¹ Dr. Bond asks, "What is the significance of the fact that the period of maximum wealth production has, in so many cases, coincided with the crest of the civilisation wave, and has accompanied the beginning of the fall?" Whatever the significance, the fact itself brands those who point to our present prosperity as a sure symptom of healthy progress as the most dangerous of social quacks.

I have shewn earlier how easily it is possible to keep up for some generations the trappings of social progress by claiming as our own the momentum imparted by the past generation and by throwing into the fight our remaining biological reserves of capital (e.g. sterilising our more able women as teachers to provide the best education for the sub-normal). The average citizen's obliviousness to decay in the personal intelligence of the people is rendered more complete by the fact that the change is very slow in terms of human lives. Because he himself is moving with the stream he is no more able to perceive the approach of danger than is the captain of a fog-bound vessel becalmed on a swiftly moving tide.

2. FAILURE OF DEMOCRACY'S PRESS TO GIVE IT VITAL NEWS

Many people argue to-day that because the management of a modern society in any true sense demands considerable appreciation of economic and biological technical matters, the day of democracy is at an end. They point to oligarchic Germany where the community boldly acts upon the wisdom of the biologist and the medical man and where eugenic laws are instantly

¹ "Some Causes of Racial Decay," C. J. Bond, C.M.G., F.R.C.S., Galton Lecture, 1928.

put into operation. I am convinced that the issues are not by any means either beyond the interest or the capacity of a democracy such as ours, but they need a strong and intelligent press, since all issues in democracy can come to expression only through the press.

Now our journalists, whilst flattering their readers fulsomely in print, have no joke so old among themselves as that concerning the stupidity and ignorance of their readers. So wholeheartedly have they worked to adjust their minds to the dimensions of that of their public that to-day it is doubtful if a handful of readers remains unable to find a newspaper voicing loudly enough sufficiently crude and ignorant views. Infected by the mental habits of their readers the majority of leader writers have been as readily deceived as the common man by the absence of any gross symptoms of social decay. For the most part they ride with much-com-mended brassy optimism, and a fine, windy eloquence, rough-shod over the delicate mosaic of evidence regarding progress or decline which the scientist is concerned to clarify.

This is the second obstacle: the default of the press in a democratic state. There is more in this failure than an inability to see the real news value of a novel approach to social problems. There is an unconscious reluctance akin to that which made the Pompeians willing to discuss anything but Vesuvius. Again, eugenic questions abut closely on the unresolved sex complexes of most of the last generation, who fear only one thing more than free love among the unmarried, namely any attack on the unrestrained voluptuarism of the married. Eugenics makes the production of children a lofty religious purpose, best severed alike from cheap romanticism and mere sensuality and consequently not much concerned with the laws which a past society has erected around these. It maintains further that a citizen's sexual affairs, in so far as they concern the begetting of children, are far from being a purely personal matter but must admit of fine regulation by the state on behalf of the

happiness of all and the fitness of the unborn. Finally, eugenics requires a re-definition of good and evil—as they arise in the light of evolutionary morality—and that would cut deeply into established institutions on both sides of the political fence.

Perhaps, viewing these thorny issues, it is not surprising that the press holds back. Yet a great prize awaits the journalist clever enough to find his way sure-footedly in this new field, and we may live to see a public less interested in debating whether the street lighting of Birmingham is superior to that of Sheffield than in hearing which of these cities has in the year produced a larger proportion of children of high promise, of future leaders in art and science and politics. Exact analyses are published each week of the accidental casualties of road traffic; but no one counts the empty places in the birth ranks of the leaders of civilisation. There is betting on horse races, but none on the human race. To-day if our country were threatened by a foreign army of invasion it would be not only news, but the stuff of history; yet there is not a word in print about the great invasion of this country by the hopeless army of the dull, marching day by day in ceaseless increase into every town and village of our country. This is a real and terrible attack for all its silence, since such an invasion resulted, for instance, in the substitution of the present racial farrago of Greece for that noble stock which created the glory of its prime; and it will produce similarly a loss in this country of all the things that we hold dear.

A dreary repetition of the six hundredth gangster fight in Chicago is accounted news, but who has tried to tell the community of the coming and going of reinforcements, or of the daily positions of the line of battle, in the life and death war for civilisation? How many have been stirred to a consciousness of their part in stemming the great retreat that we are now facing in the fight for civilisation and for this country's leadership in the van of evolution? We must get either a new press or a political organisation which does not need a press.

3. FALSE HOPES, AS THAT A COMPLEX CIVILISATION WILL AUTOMATICALLY CREATE INTELLIGENCE

Action, then, is hampered first and foremost by the great numbers of the totally ignorant and the inertly complacent. It is held up next by a rather more educated but more foolish section of people who vaguely know of the danger but who exorcise it with some verbal charm or talisman. Medical science, they assert, will invent an injection to "cure" idiots and convert imbeciles into wise men overnight. Or "Nature will solve everything." This is just what we wish to prevent, for Nature will gladly let us deteriorate into idiots and then urge some more intelligent nation to knock us on the head. She favours the methods of the jungle and is not afraid of waste, nor particular as to who finally satisfies her demands. She does not insist even that the human race shall progress at all, in any of its branches. As every biologist knows there are many species that have gone downhill, whilst the floor of Nature's workshop is strewn with discarded experiments.

Indifferent Nature holds no infallible promise of evolution for the human race: that has to be striven for. We know only that, as Stanley Hall concluded, "man has not proved himself able to remain permanently civilised." He slips back tiresomely, like a cultivated flower in the hedge. The reason is simple and we have studied it with respect to intelligence in our "curves of supply and of demand": to wit, that success in civilisation and enthusiastic fitness for its purposes are quite unrelated to survival in civilisation. Matters could be left to "Nature," i.e. to look after themselves, if once more some arrangement could be invented automatically to make the size of family proportional to the success, in the highest sense, of the parents.

If this adjustment could be brought about a great advance could be made in the biological quality of intelligence purely by attending to the ever-finer development of civilisation. Because this step is so far within the

bounds of possibility that I shall be discussing it in the next chapter on practical steps, I want to enquire further at this point into its implications. Granted this adjustment the increasing complication of the arts of civilisation would be a most desirable circumstance, for culture would draw upward the native capacity of the people just as the loss of the lower leaves of trees is said to have induced an increase in the stature of the giraffe. Incidentally, Great Britain, through having constituted herself a clearing house for the world's business and the home of some of its most complex industries, would be (and is) in a very happy position for maintaining a high level of intelligence (and since high intelligence creates complex industries, as much as the converse, a cumulative circle of intelligence growth could be set up in this fortunate country).

There is one dangerous crevasse in this argument and I have stepped rather lightly over it on the first discussion of the curve of intelligence demand (p. 72). It is the assumption that modern civilisation demands more intelligence than less "complex" societies. Observe first that the environment of any individual is as complicated as he likes to make it: a research chemist once known to me, a man of outstanding mental capacity, dedicated himself to a celibate life of wrestling with abstruse problems in food chemistry, until, inadequate to their further complexity, he worried himself into an early grave. Meanwhile, the unemployed man next door never bothered with anything more complicated than remembering the names of his ten children. As far as living and surviving biologically are concerned the alleged greater difficulty of this age is sheer nonsense. Government services, organised charities, educational, medical and social-welfare workers have made life a much simpler matter. Consequently the half-wit, who would never have survived the complicated social test of an Elizabethan English village (and social situations on which life depends are probably higher "G" tests than many mechanical problems), or even that of a

savage tribe, lives and reproduces with ease under the social services of a modern city. The most stupid creatures in the animal world are the domesticated animals. This, incidentally, is the needed rejoinder to the argument that more people are certified as mentally defective to-day merely because of the increasing complexity of modern life.

This disgusting perversion of evolution, in which the more enterprising perish while the stall-fed multiply, though rampant among us, is, as I have pointed out above, one which could be completely avoided by adjusting the birth rate of parents to the magnitude of their contribution to civilisation and the need which society has of them. A government would not then over-work its scientists and medical workers more than its less skilled ranks, its soldiers or car-park attendants, would not offer them less pay and security than are vouchsafed to a bookmaker or sterilise them on a larger scale than it does its mental defectives. Granted this condition and examining the curve of demand which would have to guide us in legislation we should probably find that increasing complexity of civilisation is causing a marked increase of demand in the uppermost levels of intelligence—I.Q. 130 and above—a slight increase in the I.Q. 80–85 range, for simple repetitive and routine industrial tasks, and little change elsewhere.

Until the horse of demand and the cart of reproduction rate are harnessed together again culture can perform a eugenic service only by acting as an indicator of the retreat of capacity. Not all aspects of culture can do this: no one will notice when the percentage of people able to appreciate Shakespeare falls off, but when arts and industries decay, when (as is now beginning) there comes a shortage of skilled men in engineering, even the dullard will begin to cry havoc.

Increasing complexity of civilisation will lead to increased intelligence only when new and special conditions of procreation have been introduced.

4. ON SHAPING HEREDITARY CONSTITUTION BY ENVIRONMENTAL REFORMS

Improving the breed through improving the environment under conditions in which fertility responds to success is in truth the only sound way of ultimate advance in innate traits. For the innate qualities experimentally investigated and demonstrably desirable, such as intelligence, are but a fraction of all the human physical and mental qualities concerned: most are unknown to us and may, when known, be so subtly interacting that we must leave their selection to the civilisation we create, controlling them indirectly through its mould. That is to say, in most things we can only cut off the tail of stragglers by direct eugenic methods; we must leave to culture the breeding of vanguard qualities.

As a clear example of the mechanism whereby environment moulds the innate racial characteristics we may consider stature. A population exposed (individually) for many generations to a deficient food supply becomes shorter in stature, because in each generation those hereditarily set to have bigger frames are the first to become delicate, and to die of disease through undernourishment. This resulting state of stockiness is, of course, a permanent hereditary effect: feeding well the next generation will not restore the stature; the genes of larger stature have gone from that sample of population for ever, or until variation brings them slowly back again in many, many generations. Thus the true-breeding street Arab is a product of the slum, and thus environment can shape all kinds of innate qualities.

How then can this be reconciled with the statement that the slum is a product of the slumite, i.e. that poverty is a product of low intelligence? Through two considerations (1) that interaction of heredity and environment is in both directions, each moulding the other; (2) that there is in this respect a marked difference between physical and mental traits; the former being at the mercy of environment, the latter shaping environment.

In the heredity *v.* environment controversies it is all too easily forgotten that man differs from animals in that he is responsible for most of his physical environment and all of his social environment. Those who rail at governments and speak as if there were some *Deus ex machina* who could, if he would, improve social conditions with a word, forget that the limits of social well-being and the hedge of cruelty and restriction that impoverishes life, are set by the innate capacity of man himself.

To-day we suffer from a plague of "thinkers" who relapse from realism to the emotional age of a child demanding from its father. These spoilt children of a too parental government drown all discussion of social problems with their screaming for the moon. Once again: one cannot have satisfaction both ways: it is either State control of births along with the desired State socialism or unchecked spawning of the unfit along with misery and starvation. The present partnership of State socialism with irresponsibility of birth rate will be a short-lived fiasco which must end in bankruptcy, fruitless revolution or war. We shall be more realistic when, instead of merely deploring the incompetence of our present politicians, we face the fact that unless some action is taken the supply of ability for the next generation of politicians will be even worse.

Mental capacity happens to be one of the qualities which we can breed by direct eugenic methods (and since it is slightly correlated with other desirable mental and physical qualities we certainly do no damage to the less definable desirables by breeding for intelligence). But as I have argued in this section above, a good part of eugenic progress must come indirectly through improving environment, through what might be called "cultural selection of genes." For "fitness" in the biological sense is always fitness *for something*, and the type of person we breed will depend on the type of civilisation we construct.

In this genetic influence of culture itself lies the element

of scientific justification for those who oppose direct eugenic action with talk of intangible human values and who remain critical of science and scientific breeding. All the deep and inexpressible intuitive values for which we fight in civilisation will be reflected in the end in the inborn nature of man. Christianity is a powerful "cultural selector of genes." A Christ physically childless has, first, a spiritual immortality. This moulds in time the race itself, resulting in a physical, biological immortality of the Christ type far exceeding that of the most physically prolific types. Possibly the most rapid evolution of this kind is going on to-day in the structure of our unconscious minds, by modifying the endowment of animal instincts and emotionality which we possess. High emotionality is a handicap in most civilised life. Too much investment of instinct energy in sexual and pugnacious drives also is a useless luxury in the present economy of evolution. This latter point I will develop when speaking of birth control in the next chapter. Whilst the fountains of energy are being modified in the racial constitution through cultural influences it may be that Nature is prepared temporarily to neglect the development of mere mental capacity: yet there is no reason why both should not go forward together, to the greater happiness of society.

If culture is capable of moulding the innate characters of the population in this way why is not attention to immediately desirable environmental reforms the best way of ensuring human advance? Mainly because, I must repeat, biological survival—birth rate—has not been adjusted to success in the conditions provided. This adjustment, involving an increase in the birth rate of those who can be fit and happy in civilisation, and a decrease for those having physical, emotional and mental disabilities, is in fact all that some eugenicists ask.

At this point there frequently arises a debate as to whether environmental improvement should precede or follow eugenic action. A city medical officer, whose ripe experience of public health and of the administrative

committees that control it justifies my fullest respect, told me that the decline of I.Q. calculated in my research was entirely in accord with his own expectations. "But," he added, "it is doubtful if public bodies will act until, through a levelling up of environmental conditions for all, they have seen for themselves that environment alone does not account for the big differences in physical constitution and mental capacity." A similar plea for the elimination of environmental "injustices" in preference to applying eugenic measures was made by Julian Huxley in his Galton Lecture of 1936. There are two issues combined here: (1) the desirability of levelling up incomes; and (2) the postponement of eugenic measures until environmental differences have been eliminated.

There is a genuine attractive benevolence about Huxley's argument which will appeal to all socially minded people, whilst even those whose minds only extend to sporadic charity will agree that extreme poverty and the wretchedness of the slums must be swept away for ever. And yet I maintain that as it stands it is bad Christianity, misapprehended science, wasteful practical politics—and incidentally such a perversion of eugenics as might cause Galton to turn in his grave.¹

Where is the value and beauty of science if, in place of precise, small-scale experiment and the intelligent application of principles and inferences, the whole world must be turned into a laboratory to prove a simple fact? Possibly someone else may be requiring the world as a stage for a biological experiment—there are many fascinating alternatives besides this of Professor Huxley. Where is the power and beneficence of science if it cannot predict? Where is its dignity if society, blinded with political passions, cannot be made to respect its advice on human affairs?

The thing is bad Christianity, because it arises from

¹ A truer recognition of the meaning of eugenics is contained in Caradog Jones' "Eugenic Aspects of the Merseyside Survey," *Eug. Rev.*, July 1936, who says "if conditions are not what they should be, the most radical way of altering the conditions is to alter the people who create them."

that flabby perversion of moral truth of which I have spoken, which would have us love everything promiscuously rather than the best in everything. As a political programme it is faulty because with the present resources of society the elimination of poor living conditions is a will-o'-the-wisp leading the community to flounder ever deeper in the morass of poverty, owing to the breeding rate of the incompetent and careless continually keeping up with the provisions made at the expense of a diminishing remainder of active workers. In Liverpool to-day, where our newspapers bemoan that people are living six, seven and eight in a room, £8,000,000 is being spent on pulling down the city's slums and building new homes which poor people can afford. After Caradog Jones' analysis of eugenic aspects of the Merseyside Survey we know what this means. Even the newspaper correctly but complacently adds "they say it will take twenty years to wipe out the present sub-standard dwellings, and by then there will be a new lot to tackle." The same newspaper records with equal satisfaction that "a total of 165,202 visits—an increase of 25,347 over those of 1933—was made by district nurses to Public Assistance patients in London last year."

The critical issue here is that which arises in a leaking boat when one party is in favour of trying to bail the boat dry before stopping the leak, whilst the other is in favour of a bold plunge to stop the leak, followed by adequate bailing. The obvious danger of the first proceeding is that we may never catch up with the leak; or that some other peril may demand our attention—for people in boats must look out to sea occasionally—its stupidity is that it is a thoroughly wasteful procedure.

On the second part of the proposition—that incomes should be levelled—eugenics has less to say than have other social sciences. But it is clear that the abolition of superior rewards for superior mental and physical performances would not work in the present state of moral evolution, as is shown by Russia, which has had to

return to offering greater pay for jobs requiring stiffer training. Eugenically the proposal has only the slight disadvantage that without differential incomes we are left with no criterion of social service, apart from artificial ones invented from mental tests, etc., on which to base child allowances and recommendations for size of family. In this matter eugenics can look rather for a reduction of the extremes of wealth and hope that earning capacity as a birth rate indicator may be made progressively more reliable by a better adjustment of income to magnitude of service to the community.

The adhesion of any scientifically-minded man to the policy of a universal levelling which is to precede the application of eugenics can only arise, as did Archimedes' death, from carrying over into everyday life the one habit of the laboratory which cannot profitably be transferred: its leisurely isolation from practical considerations. We run a race with other nations, and have to make the adjustments while we run. External demands will not permit us with safety to follow the comfortable procedure of extending generous social-welfare schemes to low-grade mentality before stopping its growth. Desiring immediate comfort the average man may say, "Why this hurry about evolution? Is there any virtue in speed? And is not the evolution of man better directed first towards kindness than towards cleverness?" There is wisdom in this when we come to consider the management of eugenic advance and creative evolution, but first we are concerned with arresting a decline. We run a race with internal dissolution, like that of a sinking man in a gas-filled room fumbling with the window catches. Even if we check the decay before it checks us, the delay, through giving environmental reforms precedence over eugenic ones, may postpone for generations the hopes of achievement, of cultural advance, of vigorous living and adventure which nerves the fit body of the community and constitutes its joy in life.

Ideally, environmental reform should proceed coincidentally with an established upward trend resulting from

eugenic reform. Set birth rate to respond to fitness: then improve the mould of environment.

5. THE PERIL OF VAGUE AND SENTIMENTAL CHARITY

Well-conceived State systems of levelling up environment, therefore, need applying with certain caveats; but indiscriminate philanthropy and organised charities as such have all the evil features of levelling without its ultimate good. To say that most philanthropists are parasites on misery is as true in social effects—since in the long run the charity mongers encourage the disease and poverty they busy themselves with—as it is in its effects on their individual psychology, for there they encourage in themselves a monstrous mentality which takes delight chiefly in what is defective.

Giving way to the impulsive satisfaction of sympathy, or the less altruistic motives behind much charity, ends by being the most insidious of vices and the most destructive sin against evolution. *Le mieux est l'ennemi du bien*. If, before indulging the satisfaction of his impulses, the giver would use the reason which God has given him for the purpose, the distribution of charitable endowments would be made very differently indeed from what it is to-day; misery would be cut at its roots instead of in the fruit. It is one thing to give religious consolation to sufferers; it is a better thing, without prejudice to religion, to cure their suffering. It is a further advance to provide hygienic education which will prevent that suffering ever being incurred; it is a still further advance to prevent children being born with defects or into overcrowded families and to encourage the birth of the more educable. Wisdom thus leads charity to more and more fruitful use of her powers. At the moment we need above all things endowments devoted solely to providing us with *knowledge* of the social and biological means of controlling the inborn constitution of the future population, that all may be well born; but only the minutest fraction of the national expenditure on welfare work has yet trickled through to this vital root—research.

Some holders of purse strings may congratulate themselves that we pay in a niggardly fashion for our social welfare work: but biologically we pay for it very dearly. I recently sat at a case conference on a child who was an obstinate thief and destructive delinquent. Six people bent their minds to helping this family, for, of course, the solution did not lie in beating the boy, as experience shewed, but in coping with the poverty, perverseness of upbringing, disease and mental defect which created the difficult situation. There were two doctors, a psychologist, a social worker, a clergyman and a probation officer—and they wrestled for an hour. The boy had one brother in hospital through negligence in riding a bicycle and a sister in a convalescent home. In addition to the above the family had enjoyed or suffered the services of policeman, magistrates, public assistance officers, special school teachers, subsidised house builders, not to mention on one occasion prison warders. The total cost of that family to the city would be difficult to assess, but from the American studies of the Jukes and the Kallikaks we know how enormous is the burden of similar families.

Yet the cost is not the main matter of concern; the significant point is that the six highly able and highly trained adults around the conference table mustered two children among the lot of them, whereas the family which they served consisted of two semi-defective parents and eight semi-defective children. Again, both in our schools and in welfare work we select the most intelligent girls of each generation to be celibate teachers and social assistants and leave the less intelligent to provide the race of children which is to become the next generation. A race of beings which can organise nothing better than a topsy-turvy scheme whereby the best play midwives to the inferior ought to be in a madhouse, and will assuredly get there if it continues. Our children are amused at the misguided bird which cherishes the cuckoo's egg, but, alas, their own parents are no wiser. We are the victims of a confusion of moral thought and the slaves of blind habits which compel us to maintain

traditional social and educational standards even though it has to be done at the terrible cost of consuming our biological capital.

6. THE UNREALISED PRICE OF WHAT WE ARE THROWING AWAY

When I find myself compelled to view in a new light, and drastically to reevaluate, social practices which I formerly regarded, in conformity with the rest of society, with satisfaction, I begin to wonder whether I may not be either exaggerating the consequences of, or putting too high a price on, the very small loss in mental capacity which my measurements show to be taking place. But let us pause to think of such small increments in terms of the time required to produce them in the long, slow, upward struggle of evolution.

The difference between the brightest and the dullest or most limited member of any present-day community represents the results of many, many thousands of years of evolution. In most nations, in most cities even, you will find living side by side, but generally in different stations of society, representatives of former races that have almost disappeared, of later races advanced by thousands of years, of races that have long stood still in some sheltered backwater of evolution, of modern races that are vying with each other to be in the vanguard of progress. Our very buildings, ranging from still-existent cave dwellings to the most luxurious sky-scrapers, reflect the extent to which our civilisation is an affair of mixed cultures in which racial types of a by-gone era exist side by side with much later types and perhaps still occupy far too large a place.

The man who remarked at the guillotining of Lavoisier that though the head could be struck off in a second, a century would scarcely suffice to bring forth another like it, could not have had more melancholy thoughts than the biologist who witnesses the loss of our strains of greater mental capacity to-day. They may be bred out

in a generation, but a hundred generations may be required to recover them.

Nor is time the full measure of the wastage. Nature is cruel and prodigal of life in her methods. Tribes of fairly cunning hunters are wiped out by others only a shade more cunning. Thousands die in agony for the sake of some minute gain in anatomical structure. A people of fine physique, the product of centuries of sexual selection, is scrapped in a generation for a race of poorer physique but slightly better character or mental capacity, and these, for all their goodness and devotion, are blown to pieces by a race with slightly more mobile and inventive minds, and these for all their high courage and resource are starved by a race possessing a little more psychological intuition in business and diplomacy. So it goes on, the good shattering itself against the better, and no human imagination, however gifted, could grasp in one pulse of consciousness all the frustrated love, the courage, the hard thinking, the self-sacrifice, the sweat and agony that have been paid for smaller advances in mental capacity than those which we, in the name of sentimentality and in the spirit of slothful complacency, are allowing to perish in this generation.

7. THE HISTORICAL NOVELTY OF EUGENIC ACTION

So we face once more the astonishing spectacle of a civilisation about to plunge with a drunken helplessness into the pit. Behind us are the arches tracing the proud rise and dismal fall of previous attempts at culture, in which the spirit of civilisation, like a wounded bird, has struggled in vain to rise from the dust of barbarism. Our attempted soaring already wavers; we recognise ourselves to be at the point where previous civilisations have begun to drop downwards to the dust. Is there no means by which we may pull ourselves clear of the earth? Do we possess anything not possessed by previous cultures which will enable man for the first time to continue in the miracle of upward flight?

Among the obstacles to that consummation, as I have

discussed them in this chapter, lack of knowledge does not occur. The remedy has been known long enough and discussed freely. I find in the preface to Shaw's *Man and Superman*, a more able elaboration of many of the points dealt with here, and on enquiry I find that it was written before I was born. But for that matter the eugenic problem was clearly, if quaintly, solved, in writing, before our present civilisation arose, by Plato. If that writing had been heeded the black night of the Middle Ages need never have fallen.

The only original thought which this civilisation can offer is the thought of action—and that happens to be the only missing but essential ingredient. Consequently the problem demands more men of character rather than the further recruitment of brittle intellectuals; for the matter is already unduly "sicklied o'er with the pale caste of thought."

That it should be so difficult to get action in an alleged educated community is, however, a bitter reflection on that education. "It will come, but slowly," I am told by men of affairs. "A concession by prejudice to reason at this point; a slight change in legislation at that; a growth in eugenic conscience in this institution and in that."

Doubtless it could be reached in that muddling fashion. But what of the unnecessary wastage and suffering in the interim—unnecessary because we are men possessed of reasoning minds capable of being trained and kept in trained use. The worst feature of this long dallying is that it is a damaging insult to human intelligence and will. Through it man's joy in the free use of his knowledge and intelligence is discouraged, and the urge to social service is blunted and disheartened. A world of youth is ready to use its brains and enterprise in social adventure, if the community can be cut free from the clogging ties of fageydom and negative morality; without that opportunity youth falls back on the petty expressions of anti-social adventure. Let us admit that one of the greatest and noblest human urges is towards knowledge and

power. Let us examine the fact that the so-called "masculine" characteristics obtain little expression in a community that is becoming a collection of nurses and which offers to self-assertion only the old outlets of war and crime. These urges should be rising to expression for the good of the community as a whole, identified with the adventure of the community as a whole, in bold scientific advances of an unprecedented kind in shaping the character of man himself.

CHAPTER VI

THE WAY OUT

I. SHARPER DEFINITION OF THE FIELD OF CAMPAIGN

IN this chapter I propose to describe the forces which may be marshalled against the present decline and to outline a campaign which may be successfully waged to reinstate a progressive condition. Before doing so I want to open a window and take a momentary glance at the ground of battle, for just as in war much is lost by an officer's inability to read maps, so here society loses because so few people are able to realise social statistics in terms of their own lives and those of the people known to them. Indeed, if the present birth rate effects could be visualised by all members of the nation no government action might be required.

For purposes of discussion I shall divide the distribution of intelligence into five parts. At the lowest extremity the *feeble minded*, below an I.Q. of about 70 and constituting perhaps as much as 3 or 4 per cent of the population; next the *sub-cultural* below an I.Q. of 85 constituting about 20 per cent of the population; then the middle, average group consisting of 50 per cent of the population and ranging in I.Q. from 85 to 115. This we may call the *foundation* or *average type* of the population, and above it lies 20 per cent of *able* people (the average secondary school type) ranging from 115 to 135 I.Q. At the top we have at present 5 per cent of *highly gifted*, mainly between 135 and 180 I.Q.

Now not all children below I.Q. 70 are in special schools, nor will they as adults be cared for in institutions. Shortage of accommodation, reluctance to certify on the part of medical officers, together with unwillingness on the part of teachers or guardians to report cases for

certification owing to the social stigma, and, finally, public meanness and apathy, keep the number actually certified nearer 300,000 than 1,500,000. In other words, in mistaken kindness, deferring to a mistaken moral stigma surrounding small mental capacity, the standard of certifiable mental deficiency is kept as low as it conceivably could be, and a great many people are left to drift into poverty, disease and crime who could lead happy lives in supervised farm colonies, etc.

It has been asserted,¹ how correctly I do not know, that other countries are taking a higher standard with regard to mental defect than we do. What is certain is that a new and wider conception of mental defect is required in addition to the specialised form defined in the mental deficiency act. At present, providing the defective keeps his stupidity to himself and does not, for instance, strike people when they do things he can't understand, and providing he can turn a crank the right way in a factory, he is not certified, and nobody bothers what happens to him. But, as I have argued elsewhere (p. 76), you cannot build a city enjoying active and enterprising social life out of such citizens: you cannot even build one that is safe from disease, poverty and violence.

The real obstacle to the development of a sane and spacious social life is, however, not the numerically negligible feeble-minded, as described by the present legal definition of feeble-mindedness, but the far more extensive group which should be considered feeble-minded by any definition which takes into account the demands of a full social life under the conditions of modern civilisation. For this group I have used the term sub-cultural, meaning that its members are below the mental capacity which can be trained and educated to the successful running of a modern democracy. It is my contention that the "social problem group"² which

¹ C. B. S. Hodson, *Eugenics Review*, 1936.

² This term, used by Lidbetter (op. cit.) and others, is not yet sufficiently well defined. The nucleus of the idea is in Dr. E. O. Lewis' discovery that

occupies so much of the attention of legislators, charities, police and welfare workers, and constitutes perhaps more than a tenth of our population, is the less fortunate half of this sub-cultural fifth (plus the unsupervised feeble-minded).

Such sub-average types are often only fitfully employed, cannot co-operate in hygienic measures and in enlightened methods of bringing up children, and cannot comprehend political issues. Because they are the ready prey of newspapers with large circulations and microscopic intelligence, they constitute a dangerous shifting ballast in the ship of state. For no fault of their own, but from a constitutional weakness as blameless as, but more important than, that which makes a white man fall a more ready victim than the negro to malaria, they are more prone to join the ranks of the criminal, the unemployed, the sick, the exploited, the destroyers of æsthetic life, the wasters on crude forms of amusement, the defaulters in the active duties of citizenship.

Imbeciles, according to the law, are those "incapable of managing themselves and their affairs," whilst the feebleminded are recognised as those who "require care, supervision and control for their own good and that of others." But can a man who fails to assimilate an A or B class elementary school education, who fails to support himself without depending on other rate-payers, and who cannot control the size of his family, be said to be "capable of managing himself and his affairs"?

The first step, therefore, in eugenics is the recognition of a second grade of mental defective, the *sub-cultural social defective*, who needs "care, supervision and control" in a modern society which wishes to be as jealous of its good standards as it is kind to those who cannot reach them. The criteria for certification or recognition as a

a large proportion of border-line defectives are to be found in an hereditary group in which also appear more than the average number of insane persons, epileptics, paupers, criminals, unemployables, slum dwellers, prostitutes and social inefficients generally. This is one more example of the results of assortative mating whereby desirable or undesirable hereditary traits tend respectively to accumulate at the top and the bottom of the social scale.

2. CLOSE-UP OF "CIVILISATION WRECKERS" AND THE "NATIONAL SUICIDE CLUB"

Before advancing to the next measure it would help if we looked still more closely at the actual family conditions and outlooks of the people who form the substance of these statistical divisions according to intelligence and birth rate. From many cases studied I will select two typical families—one in the sub-cultural group, one in the able group.

First, John Smith, whose mother has just enquired if he may leave the school for mental defectives before the age of sixteen, so that he can earn something, however small, to help the family. He is a harmless-looking lad and will probably get a job on a milk round or as an errand boy, but his chances of keeping it are very remote for, as with most defectives, his powers of memory are no greater than his intelligence. There are seven other children living and two dead. The youngest is in the tattered pram outside, which he shares with the next older baby and which is watched over by a child of four.

John is exceptional in being an actual defective; for the other members of the family at school have merely been in "retarded" or in "C" classes for the dull (i.e. in the sub-cultural class), costing great effort from their teachers and shewing little for it. Gladys, the oldest child, was stubborn and difficult in school and within a year of leaving it is suspected of sex delinquencies with several men.

The father has been unemployed for seven years, but before that he worked as a carter, earning £2 a week and was considered more or less satisfactory. He was never any good at school, says Mrs. Smith, but she herself left at fourteen years of age having only reached the fourth standard. Her argument for removing John from school just when he shews signs of grasping the idea of

present himself to vote, the right to vote seems to depend on his capacity *at the moment of voting* to understand what he is about to do." That is how we get the Government we deserve.

reading, is a constant repetition of "Father says the boy ought to be in work." The family, which lives in three rooms, receives a pound a week from the Public Assistance Committee, some irregular assistance from Church charities, and help through collections of clothes for the children. At school the children receive free milk and meals, and once a year three or four of them are given a holiday at the seaside. Neglected though they appear they probably do rather better than the Thompsons, their next-door neighbours, who have two children and where the father earns £2 5s. a week on road work.

Mrs. Smith helps with a little charring, but her health does not permit her to do much. She is a small, wizened woman, looking at least forty-five, but actually not having reached thirty-five. The pitiful victim of a slavery worse than any of ancient times she yet is neither rebellious nor plaintive. Her reactions to a life that has never had any life in it have become those of an automaton. Yet by their birth rate families such as these are going to inherit the earth and bring civilisation down about their ears. Blindly, unconsciously, they gnaw away at its foundations, impoverishing themselves and other people, converting their misery into an acid corroding the foundations of society. These, the sub-cultural, in unchecked fecundity, we may call *Civilisation Wreckers, Unlimited*.

As Mrs. Smith shuffles with her half-witted litter along the pavement a car, resplendent with hours of polishing, passes by. It contains the Haslams, whose only child, Peter, aged ten, goes to a private school. Peter has an I.Q. of 120 and has come to the psychological clinic because he is egocentric and over-anxious and shews some of the behaviour difficulties of the only child. Father is a successful salesman earning about £10 a week. Mother is, one might almost say, a clever woman, but there are lines of discontent about her mouth. She has social pretensions and does not find enough "life" in the place. They "cannot afford" a second child. Do they not pay rates and taxes to bring up the

children of the Smiths? Mrs. Haslam had Peter when she was thirty-one, but Mrs. Smith started with her first child at nineteen.

The Haslams live in an atmosphere of assertive over-compensation, trained to social climbing. Their bridge game, product of intensive training, is the terror of the neighbourhood, whilst their dominance on the committee of the suburban tennis club is unquestioned. In clothes and cars they go from strength to strength; in fact, they and their like are so successful that in two or three generations they will be as extinct as the Dodo. Their title should be the National Suicide Club and they spread, wherever they go, the false values, the sounding rules and strangling regulations of their set. As the carriers of a fatal and contagious moral disease the members of our Suicide Clubs should be isolated.

The problem of national survival is that of meeting on the one flank the blindly driven hordes of Civilisation Wreckers, Unlimited, and on the other, the insidious contagion of the National Suicide Club.

3. ESSENTIAL MEASURES OF A SUCCESSFUL CAMPAIGN

In what follows I am going to discuss legislative and educative measures employing both tangible economic incentives and moral readjustments. We have to appeal to the ideals of those who have and strike at the purses of those who have not. And since there are two distinct objectives: (1) the reduction of breeding rate in those below average ability, and (2) the increase of breeding rate among the gifted; the measures may be very diverse in kind.

These measures are:

(a) *Recognition of the Sub-cultural Social Defective* and provision for his supervision, in the manner described above.

(b) *Making the Able Child an Economic Asset* to its parents. Most measures must depend on the probability that parents of a certain type will produce children of much the same type. But here we stand on even

firmer ground, for we can work, through scholarships and other means, directly with the child. Moreover, Carr Saunders,¹ among others, through the study of population problems, has shewn that the birth rate does to some extent respond to alterations in the economic value of the child to the parent.

To make education free is not enough, for eugenic purposes. The dull child must be made to some extent a fine upon his parents and the able child an asset. Or at the very least the education of the able child must be made a lesser economic burden than that of the dull child. Thus only will his production be encouraged. The logic of the situation indicates that the upper fifth of the child population which is fit for secondary schools—the “able” group—should receive with its scholarships a maintenance allowance. It is in no sense beyond the community’s means to make such an allowance to one child in five as would cause that child to cost nothing to its parents (except the labour and care of its upbringing). With such a prospect before them parents likely to beget able children would more readily enter on the business of rearing a family. With modern methods of mental testing there is not the slightest reason why the scholarship child should not be detected provisionally in the infant school. This would not be too late to be effective in encouraging the parents of a very able child to provide it with a brother. Of two families with the same standard of living, one dull and the other able, the able would have sufficient support for a third and fourth child, whereas the dull would be inclined to stop at two children.

This child allowance should be *given without regard to the economic status of the parents*, for each family has an accustomed standard of living to maintain and there is both injustice and social stupidity in making the bright child less of an asset to families having a good home than to those not possessing that background.

¹ Carr Saunders, *The Population Problem*, see also his more recent *World Population*.

(c) Increasing the Income Tax Allowance for Children

Some explanation should be demanded in Parliament as to why, in this day and age, the Budget is apparently still the work of a statesman-accountant rather than of a sociologist scientifically familiar with economic factors as they affect social customs and population trends. For instance, the allowance for married couples has recently been increased at a time when, with so many married women earning, marriage cannot be considered an economic burden on the husband, nor with the prevalence of birth control can marriage alone be considered of any special significance to the State. It is difficult to see why a woman who has no intention of having children should be encouraged by the State to give up being an efficient worker to be buried alive in fruitless wedlock.

A decrease of the marriage allowance, together with a very considerable increase in the child allowance—or an actual payment¹—is the need of to-day. This assumes that the income-tax paying section is on the whole more gifted than the section on whom the income tax is now most freely spent, an assumption which, in view of the evidence, cannot be doubted. It is a pity, as I have said earlier, that through the absence of any more closely correlating index of ability, we are forced to fall back on adjusting birth rate to wealth, a proceeding which might eliminate from the community the poet, the religious leader, the savant, and the artist, and which may favour slightly a few undesirable traits; but there is no better tangible index available. We must make it better in the first place by fitting incomes more closely to social worth, until birth rate can be adjusted to the success, in the highest and best sense, of the parents; and in the interim the religious leader and the savant should be depended upon, in virtue of their vision of the whole, to have families under the harder conditions existing owing

¹ Professor Fisher has shewn that rebates alone cannot hope to have a very great effect on birth rate. "A bad joke" is one statistician's description of the Chancellor's allowance, for it pays only £1 in £50 of the cost of child upbringing.

to State carelessness regarding the value of their services to the community.

An allowance such that each child would be worth at least £30 a year (I will ask actuaries to work that out in terms of the actual income tax allowance), for every child, should suffice to take the edge off the cost of upbringing, whilst not offering such rewards that the racial suicide of the selfish will be postponed.

Since the recent slight increase of child allowance (£10) has cost the Treasury only £2,000,000, a slight cut in the cost of armaments and social services would provide all that is necessary for re-creating the nation through the birth rate. After all, brains are more important than battleships—even in winning a war.

It must never be overlooked and can never be too frequently emphasised that the essential eugenic measures should concern themselves with the body of good average citizens from whom the able and the highly gifted are constantly being recruited and from which they would be still more powerfully recruited if the biologically too scattered population could be pulled together by a raising of the average and the cutting off of the tail of stragglers. In this country the average yearly expenditure per family appears to be about £330.¹ This approximates to the annual income of £317 which a committee of 2,000 scientists² recently worked out, from a study of nutrition, etc., to be ideal for a family of four. The tax allowance might therefore be such as to give an optimum sanction to three children at this income level and to more children at higher income levels.

As to whether stored wealth, as distinct from income, had better be, up to a few thousand pounds, related to birth rate, it is difficult to say. Often intelligence shews itself more in the manner of spending money than in the making of it, whilst the qualities of foresight and prudence

¹ *The Home Market*, Harrison and Mitchell, 1936.

² Including Sir F. G. Hopkins, Sir John Orr, Sir Daniel Hall and Sir Richard Gregory, and reported to the Association of Scientific Workers, March 31, 1936.

which are responsible for the maintenance of the smaller savings are precisely those most needing to be bred into a race successfully bearing a foresighted civilisation.

The difference between this provision of income-tax allowances and the inauguration of indiscriminate family allowances such as has occurred in France, Russia, Germany and Italy, is the difference between ascendancy and decay. We may well laugh at these latter schemes, for their net effect is to increase the birth rate of the less capable, of those who can earn money in no other way than by going to bed. Stalin's bonus of £80 per annum for the eighth and subsequent children in a family may be justifiable in Russia, which still has great amounts of low-grade work to be done, but not in Atlantic civilisations. Even in Russia it may prove a short-sighted policy, prejudicing the future character of Russian civilisation, and all for the lack of a differential index, which last could doubtless be found easily enough from psychological and medical tests in the absence of a scale of income differences.

(d) Extending Conditions of Steadiness and Security of Income

Though the sub-cultural have children under any conditions one of the chief reasons for postponement (and therefore reduction) of reproduction in the average and able groups is not so much the smallness of income as its uncertainty. Any measures which smooth out and stabilise incomes—and, in the case of professions, throw the earning period earlier—would produce an increase of birth rate among the desirable parents of the nation. With lower middle-class couples, poised so close to the edge of the pit of poverty, it seems to-day that desire for security and the fear of uncertainty in standards of living are the chief conscious reason for not having children.

(e) Regulation of Marriage and Celibacy

Attempts have been made at various times to introduce certificates of fitness for marriage. It is argued—and

nothing but custom opposes the argument—that if certificates of proficiency are required by the State in those driving motor-cars they should certainly be demanded of those proposing to produce and rear future citizens.

Lack of success in these propositions is due to the fact that though the public conscience may be increasingly interested in the number and quality of children born it is less inclined to interfere in the marital and sexual life of individuals, since both of these are becoming increasingly unrelated to the planning of births.

The very sound slogan, “No children to be born on public assistance grants” might be translated “No marriage for persons without earning capacity.” Unfortunately for the perfection of such an arrangement we have to remember that illegitimate children, even to-day, constitute an appreciable percentage of children born. It seems best, therefore, to demand abstention from reproduction by those not earning or incapable of earning, and to insist on segregation for those persistently failing to comply (or for those having illegitimate children without planning for their satisfactory upbringing).

The converse process—the avoidance of celibacy in groups of good biological standing—is another matter, and an important one, as is shewn by the well-known disastrous effects of the celibacy of the priesthood in countries such as Spain.

There should be no job for people of more than average capacity in which celibacy is either a legal or a circumstantial condition of their employment. Self-imposed celibacy is another matter. Failures to meet this demand are not extensive, but they are none the less worth remedying. Army and Air Force officers are, for some years at least, discouraged from marrying; naval officers by circumstances have their marriage rate reduced and women teachers in elementary and secondary schools (except in relatively advanced areas such as London and Leicester) are legally forbidden to marry under pain of losing their jobs. In the last instance, at least, the loss to the nation

is very great: one could point to many men of genius whose mothers have been *ci-devant* school teachers.

(f) *Provision of Child Allowances in "Above Average" Groups*

Though general, ungraded child allowances are foolish in the extreme, it would be an aid to a eugenic trend of the birth rate—a patching or a preliminary scaffolding to more comprehensive schemes—if the birth rate of some particular groups, large in numbers and of unquestionable eugenic worth, could be encouraged.

For example, since 50 per cent of the candidates for the police force are rejected on mental or physical grounds we are justified in concluding that we have there a body of men superior to the general average of the nation (providing we confirm that the applicants are average men). A similar marked superiority of average in many important inheritable qualities could probably be shewn statistically to exist for many sections of the civil service, higher ranks of the army, navy and air force, clergymen, solicitors, teachers, officers of the merchant service, trained salesmen, business executives, skilled engineers, etc.

Unfortunately, as I have pointed out earlier, though the powers which control such organisations as the police force and the air force are most jealous of their exacting standards of ability and physique, and though they will bitterly rue the day when they are forced to abandon them, their foresight shews no sign of extending itself to consider whether these select groups are adequately reproducing their kind. Their sense of responsibility is still more remote from the obvious, common-sense step of creating incentives to ensure such a birth rate as will make the desired qualities more common.

Teachers and doctors, as is well known, are the most rapidly dying sections of the community. They average decidedly less than two children per pair of adults. The most direct incentive to apply to such groups is a well-worked-out scheme of child allowances, either through

the State rearranging salaries at the source, or by a pooling of resources within the profession. Observations on the success of an experiment of this kind are urgently needed to guide further eugenic measures.¹ So far the intelligence and moral sense necessary for such a step have only been manifested by universities (several American and one English institution), which have introduced salary bonuses for members of their staffs, based on the number of children supported. The universities of to-morrow will probably thank us for this more than for any other endowment; for surveys of the intelligence of children shew the highest recorded intelligences in the children of university workers.

A uniquely daring eugenic measure, which is appropriately to be discussed in this section but which at present is certainly beyond the stride of practical politics in a community not yet able to take the tiny steps of eugenic infancy, is Breuer's scheme of Eutelegensis, described in the footnote below.²

(g) *The Universal Availability of Birth Control*

In this section we meet the real crux of the eugenic problem of to-day and we must examine it very soberly.

To begin with let us ruminare on the fact that the

¹ The most complete discussion of this problem will be found in Leonard Darwin's *Eugenic Reform*.

² *Eutelegensis*.—Though physiology has not advanced to the artificial and impersonal rearing of embryos, it has solved the problem of artificial fertilisation to the extent that a very large number of women could, by a medical service preserving and transporting spermatozoa, become mothers of children of one father. A man of exceptional character, physique and intellect could thus spread these traits very widely, indeed this appears the most rapid and decisive way of raising the average of the race. We cannot choose the mothers, for they are bound to be average women married to average men, or unmarried, but by careful choice of fathers it would be possible by this means to breed eventually a new race; for the first generation would be half average half superior, the next three-quarters from the superior stock, the next seven-eighths, and so on.

The conception is a daring one; but it involves problems of psychology, moral evolution and conventions of feeling which make it too complex a matter to discuss here or to suggest as being practicable without years of investigation and discussion. It is, however, momentous as an emergency possibility in a far-deteriorated race.

present flood of low-grade mentality, and especially the strikingly rank growth of the sub-cultural (who have, let us not forget, a family of more than six children, on an average, to-day), could be stopped at once, at its source, by the provision of birth-control advice and assistance for those who are not intelligent or heedful enough to seek such facilities for themselves. For these large families are certainly not desired by the poverty stricken or the lowly in intelligence. Their appearance destroys what small chance the parents have of maintaining a reasonable standard of comfort. For the community to provide the less capable with a desirable standard of living—a level of comfort the loss of which would be distinctly felt—is a necessary first advance, but it should not be made without the simultaneous provision of birth-control facilities.

Such a propagation of birth-control habits into sections of the population hitherto ignorant and careless is demanded, incidentally, as much in the interests of improving environment as in the cause of racial progress: it is monstrously stupid, as Major Darwin points out in the foreword to this book, to bring up most children in just such homes as lack food, intelligent care and cultural background.¹

Opposition to the spread of birth control is often inspired by a fear of depopulation—a very justifiable fear, to a consideration of which I will return shortly. What is so often overlooked in this connection, however, is that the heavy birth rate of one section of the community—the sub-cultural—may be an important indirect cause of the low birth rate which has seized upon the other sections.

In the first place the social problem group is directly

¹ This latter argument has already been grasped by the newspapers, for I see in a contemporary a whole column devoted to commenting in an interesting fashion on a current issue of *Planning* (July 1936), an extract from which reads: "The South of England is healthier than the North of England or South Wales, judging by the death rate, but most children are not in the healthiest place." It adds: "It seems hardly an ideal arrangement that those regions most depressed and most exposed to malnutrition should be those containing the largest proportion of our future citizens." Actually, of course, the differences are originally those of social position rather than of region.

and indirectly an economic burden, relieved of which the birth rate of other sections would to some small extent recover automatically. Secondly, the existence of very different standards of living and the resultant class differences of culture create a cultural burden, relieved of which the birth rate of the large middle section of the community would recover still more. This latter effect may be complex in origin and action, but it is none the less real. It may be illustrated, for instance, by the trouble and expense to which parents will go (and the wasteful duplication of educational machinery which the community supports) to prevent their children associating with and acquiring the habits of children with lower cultural standards than are normal to themselves. It takes a heavy toll again in the conflict and lack of social solidarity which wrecks the life of all communities with an intricate caste system.

Now it happens that we have reached a stage in history when the community is beginning to take some of the precepts of Christianity seriously and is increasingly determined that every child, no matter what its parentage, shall be healthily brought up and well educated according to its real abilities. If the earning section of the community is going to pay for this and is at the same time going to send its intelligent children to other than State schools or to neglect other free services, it is obvious that the cost will cause a further reduction of birth rate in this group. On the other hand, if the birth rate of the sub-cultural falls, intelligent children may be born to occupy places in the State schools now occupied by the relatively unintelligent and sub-cultural—we may convert our “special” schools to secondary schools. Similarly what little justification exists for that snobbery which keeps many intelligent children from State schools will vanish as the school changes under the influence of the changing birth rate. At present we have a vicious circle here, moving in the wrong direction. That this happy conclusion is no mirage is shewn by surveys in Sweden, where birth control has for decades been uni-

versally accepted, where the birth rate of the poor has fallen, and the birth rate of the higher-income group has already appreciably risen in response.

Though it may seem scarcely necessary to discuss in passing the premise implicit in most of these arguments, namely that deliberate birth control is the cause of the differential birth rate, I shall do so because the early specialist literature, now superseded by adequate investigation, made much noise about a mysterious bogy of "physical sterility": and popular thought is apt to embrace to-day the error that was thrown out by science yesterday.

There is no evidence of any significant difference of physiological fertility between races or social classes. Barrenness could be a factor influencing the speed of growth of races and classes if they were reproducing up to the physiological limit of frequency of child births, but no race or class is anywhere near that in Europe and we must accept deliberate birth control as the deciding factor in the differential birth rate. Extent of birth-control practice is in turn a function of social status, and especially of an upward movement in social status. Thus the Jewish race in East London, where it occupies a lower social status than the English natives, is reproducing more rapidly than the English, but in Bavaria, where the Jews occupy a higher social status, it has a reproduction rate less than that of the Bavarian natives.

Unless the propagation of birth-control knowledge is systematically assisted as an educative and socially hygienic measure, we may expect birth control to continue spreading slowly from the top of society downwards, and the slowness and uncertainty of that movement will be a costly and tedious obstacle to social reform. At present birth control may be said to have reached the level of the skilled workers and there we may soon expect to find the point of maximum restriction; for the classes above have got over the naïve use of the power of birth control and have lost from their ranks those with no sense of family, so that they do not restrict up to the limit of race suicide. We may, therefore, expect

a narrow "waist" to pass down the birth-rate profile of social classes, as shewn in Diagram VIII, through each class using the new means of status control to excess on first acquiring it, followed by a stable condition in which the birth rate of that class adjusts to its true opportunities.

I had expected, as pointed out on p. 16, to detect signs of this "waist" of maximum restriction in Diagrams II, and there is indeed evidence of it in the city population (Diagram IIA) where, apart from the 160-180 range which deals with relatively rare types and few cases, the smallest reproduction rate is in the 120-140 I.Q. range (2.76 children per family).

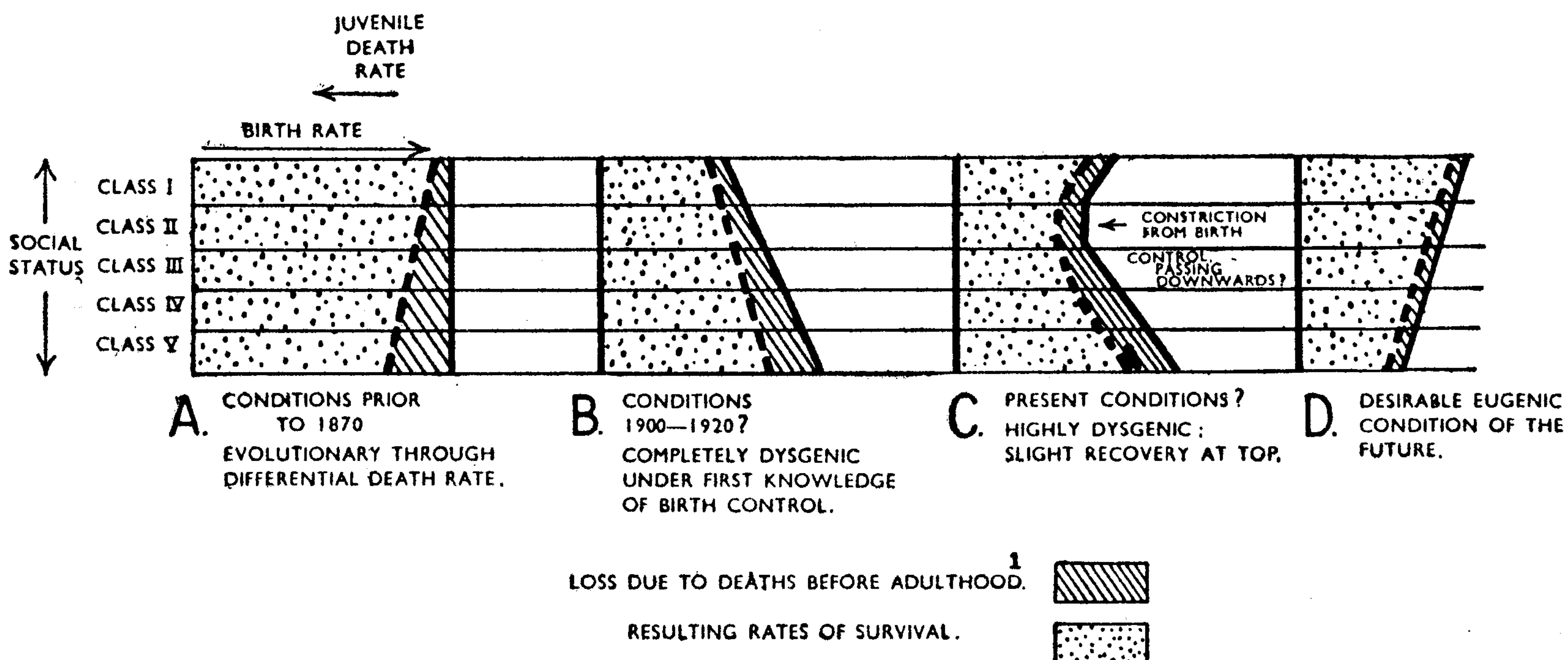


DIAGRAM VIII.—Arrest of Eugenic Phase through Slow Spread of Birth Control.

¹ With regard to death rates in C, the recent Merseyside Survey (Caradog Jones, op. cit.) shewed that, for example, about 27 per cent. of the children born in the unskilled group had died as compared with only 15 per cent in the other (skilled) groups.

Without special assistance this point of maximum restriction will not pass steadily downwards to the mental-deficiency level; it is likely to halt rather at the level of the sub-cultural who will be as incapable of absorbing this as they are the other essential restraints of modern civilisation.¹ That is why I have argued for special recognition and treatment for the sub-cultural. Delay in

¹ In Sweden, which appears to have a high average intelligence level (see *Psychology and Social Progress*, pp. 57-83), and where general birth control has long been available, the stable eugenic position of Diagram D appears to have become already established, the poorest section of the community

assuming the stable eugenic condition shewn at "D" after relinquishing the stable eugenic position at "A" is a very costly matter. We have no precedent to indicate how long we may safely dally in the highly dysgenic transition period. In particular a prolonged halt of the maximum birth-restriction collar anywhere near the centre of the distribution curve would have a most disastrous effect on democracy. For, in spite of its falling at a level where the population is initially numerous and in spite of hereditary regression tendencies, it would eventually split the population into two distinct intelligence groups, as distinct socially as Indian castes and more distinct biologically than most races. A world of Wellsian Morlocks at the mercy of a higher caste, their breeding controlled for them because they will not control it themselves, is thus neither inconceivable nor unlikely, but it is one which, like all distinctions wrecking human sympathy, has been repugnant to the best minds of all ages; in a practical way because the temptation to exploitation is bad, æsthetically because the best of the race is continually parodied by the slavish sub-men who must needs be its apes.

Yet, as an emergency measure during the crisis created by the mental impoverishment of this and the next generation, it may be necessary to emphasise rather than dissolve class differences. The trend of the diagram on page 123 shews that there is going to be in the coming generation a dangerous shortage of inventive and directive brains capable of a comprehensive grasp of affairs. To

having the lowest birth rate. In this country and America it is doubtful, as we have seen, whether the lowest group would react in this way. There is a little evidence on the point in the work of Baker, G., "The Mental and Social Status of 1,500 Patients in the Obstetrical Clinic of the Johns Hopkins Hospital," *Bull. J. H. Hosp.*, 1933, No. 52. The average mental age of the whites (a poor sample) was 12 years, of the negroes 10 years. 39 per cent of the whites and 70 per cent of the negroes were considered feebleminded on tests. Over two-thirds of the whites and one-third of the negroes had at any rate attempted the use of contraceptives, but Baker suggests that his findings point to the need for permissive legislation for sterilisation at this level. Adequate research, however, might yet reveal contraceptive methods which could be safely used by border-line feebleminded adults.

combat this it may be necessary, in addition to arranging for better use of existing talent, to make sure that this residue of high ability shall not be swamped by interbreeding with the mediocre mass of the population. Social stratification already produces, as research has shewn, a markedly assortative mating, those from families of high ability tending to marry others of similar strain. Absence of social stratification would make sexual selection less sure. But in the near future countries suffering a severe dysgenic decline may be tempted to make this assortative mating well-nigh absolute, and that could only be done in a natural manner by making class barriers more absolute. The caste system of India may seem unethical to us who have the advantage of a small scatter of racial types, but it has at least preserved practically intact over many generations the characters, and especially the high ability, of the upper castes, which would otherwise have been reduced to an ineffective level by interbreeding. It is curious that the spirit of the age should be welcoming the long-desired breaking-down of class barriers, rendered easier by better general education, just at the time when the increased scatter of constitutional individual capacity into the lower ranges of the intelligence scale threatens to make the raising of breeding barriers an unwelcome necessity!

Though the majority of educated people have long regarded the practice of birth control—for purposes of spacing births and maintaining standards of living—as their inalienable right, the urgent necessity of extending this right to the whole population is apparently being thwarted by strange cross currents of opposition.

All too frequently sheer conservatism hides behind trumped-up “rationalisations” and ill-chosen allies. In this matter an entirely wrong picture is given of the Roman Catholic opposition. Catholics are a small minority in this country and if they are sometimes a noisy minority it is excusable because of that insecurity which makes all minorities very active. The best Catholics, however, have no wish to interfere with the ideals and affairs of the

Protestant and secular majority. The same dysgenic trend holds in Catholic as in other communities, the less intelligent having larger families, and if, through postponement of means of checking this trend, poverty and mental defect accumulate excessively in any one church, it is only fair that the community should ask that church to shoulder the cost of its greater contribution to these burdens. For the sincerely held religious beliefs of the poor one can only have the greatest respect and it is unjust that they should suffer for attitudes which they have been brought up from infancy to maintain.

Finally, it is a mistake to suppose that the Roman Catholic Church is opposed to birth control. It favours control through abstinence and through use of the "safe period." The former is not so remote from biological good sense as it at first seems (see discussion, p. 154), and the latter has been shewn by recent research¹ to be a scientific and reliable means of birth control.

Nevertheless, these two methods require for their success respectively character and intelligence. Hence through their unaided use the least-restricted families will be those of parents most deficient in these qualities. Moreover, so unnatural a degree of sexual suppression or repression as that required by complete abstinence is, as all psychology shews, contrary to the healthy development of personality and to efficient work.² The most authoritative of recent comments on such a substitute for contraception is that of Lord Dawson of Penn, speaking in the House of Lords. Of a married couple already possessing two or three children and seeking to restrict further births by abstinence alone, he said, "They will

¹ *Brit. Med. Journ.*, May 30, 1936, J. Young, D.S.O., M.D., F.R.C.S., on "Contraception and the So-called Safe Period," describes confirmatory research on the Ogino-Knaus ovulation calculation.

² For that matter, though it plays some part in discussions, it plays practically none in the life of the people, as the American biologist-statistician Pearl found in studying nearly 1,000 couples who limited their families. "Only 2.2 per cent adopted abstinence apart from the so-called safe period, and there were none who admitted complete abstinence" (Young, loc. cit.).

have to practise what amounts to celibacy in the married state and I give it as my solemn medical opinion that—firstly, it would be impossible; secondly, that it would destroy their health; and thirdly, that it would force on many occasions what one always tries to avoid and that is irregularities in sex relations—I mean within the home—perversions and eccentricities.”

The term birth control should strictly be used to include all means by which races have attempted to control birth rates, of which, apart from celibacy, there are three. (1) Contraception—the prevention of conception by material means, use of safe period, etc. (2) Sterilisation. (3) Abortion.

Sterilisation as now proposed would be of little practical importance in arresting the dysgenic trend of intelligence, for actual mental defectives are, as we have seen, only a tiny fraction of the population and they are mainly born from the more numerous sub-cultural group. To stop the hundredth man from reproducing will not reverse the direction of the differential birth rate in the remaining ninety-nine. It may save the government a few pounds by conferring liberty upon a number of mental defectives who would otherwise need to be segregated.

Nevertheless, its passing into law is to be welcomed as an earnest of the nation's will to save itself—as a banner to indicate that a eugenic conscience has at last arisen. The reception given to the unanimous report of the Departmental Committee on Sterilisation is therefore a distressing reflection on the educational level of our democratic leaders.¹ However, such inability to grasp the trend of the modern world is not found everywhere and there are now several countries in which the diminution of the hereditarily defective by sterilisation has been

¹ The L.C.C., after a fantastically irresponsible debate, rejected the sterilisation report by 63 votes to 44. One objector remarked, “I can imagine some of these bright young people saying ‘I am not going to get married to a man unless he is sterilised’, and you are going to get terrible conditions in the country” (1936). The London Insurance Committee, which last year doled out more than eight million prescriptions at a cost of over a quarter of a million pounds, also voted against this means of reducing avoidable ill health and misery.

proceeding for years.¹ Switzerland, a small country enjoying a high level of general education, has proved the results of sterilisation over fifty years. In a few countries sterilisation has very foolishly been used as a punishment for sexual crimes and obtained an unfortunate association with castration, thus arousing just those primitive emotions of the Freudian unconscious which are likely to upset the reasoning of civilised people.

Abortion is far more common in this country than those not engaged in social work suppose. Young,² in his carefully checked study, accepts "the commonly agreed rate of abortion as one in five or six pregnancies" and points out that this means an annual total number of abortions in England and Wales of 100,000. This is at once an index of the desperation to which poor and sick mothers are driven, and a condemnation of the social apathy which delays the establishment of birth-control clinics.

Only 180 local authorities have yet availed themselves of the Ministry of Health's provision that birth-control advice may be given, and the most active and effective work is done by 50 voluntary clinics established by the private endeavour of exceptionally far-sighted and public-spirited people in England and Scotland (there are no clinics in Wales³). I know of one small town where the medical officer has exceeded his duties with quiet

¹ In Denmark it is introduced for purely environmental reasons, because the feeble-minded is "not able to educate and nourish his children by his own work," so that no discussion of the hereditary nature of the condition arises (see Hansen, S., "New Danish Legislation," *Eug. News*, 1934, No. 19). The same ought strictly to be said of our sub-cultural group who may not be any higher than what is recognised as feeble-minded in Denmark. It would be interesting to know how much of the greater success of Danish farming is due to a higher average of intelligence in the rural population.

² "Birth Control," *Brit. Med. Journ.*, May 30, 1936.

³ This is criminal in view of the state of affairs in Wales. I have spoken elsewhere (p. 14) of the fundamentally bad principle of shifting people from one area to another just because there is overpopulation there. Since overpopulation in one section of a nation (though not necessarily in a whole nation as in Italy and Japan) is, apart from accidental causes, associated with inferior biological quality, one will in the end shift the conditions with the people and create overpopulation and low standards in a new region. For this reason my sympathy is with the West Country labourers rather than with the newspaper which deplores to-day that "Despite a moving appeal by a Government

efficiency and provided birth control for several hard-pressed families of mental defectives. In reducing the number of defectives by seven or eight (at a modest estimate) he is already saving the rate-payers of that small town about £400 per annum, but, far from increasing his salary for this humane enterprise, his reactionary committee is more likely to sack him.

In a democracy of free people, intelligently directing their own lives, the change from the present decline to a sure onward evolution can take place only through universally available birth control. The slogan must be, "Adjust income to social worth, and birth rate to income." Experience may show that the sub-cultural and the mentally defective are incapable of availing themselves of contraception, in which case birth control must take its other form—sterilisation. Every pair of parents which has already produced two or more children for special defective schools should be required by law to attend a birth-control clinic. Thus contraception should be extended as far down the scale of intelligence as possible¹ (it doesn't matter if it is prohibited in the House of Lords or to all professional people) and sterilisation or segregation invoked only where it persistently fails.

(h) Mental Hygiene applied to Social Attitudes governing Sterility

(i) The Revolutionary Introduction of Mental Factors through Birth Control.—When, through birth control,

Commissioner, land-owners and farm workers united to-day to turn down a £20,000 land settlement scheme for transferring unemployed Welsh miners to a communal farm in Dorset. . . . He asked the West of England to take part in the movement to remove 'this terrible canker from our national life.' Since the West of England is already full of Welsh immigrants it looks as if the solution lies in Welsh control of Welsh population.

¹ The 1934 Contraceptives Bill to regulate the sale of contraceptives by "preventing their obtrusive display and sale" got through the House of Lords by a majority of 41, mainly through reactionary bishops and the votes of a few who, desiring to make birth control available, thought it expedient nevertheless to pander to gentlemen educated for a bygone age. This Bill, if unfortunately interpreted, is likely to have precisely the opposite effect to that most needed at the present day: it is likely to aid and abet the uncontrolled birth rate of the relatively defective and ignorant.

children are begotten from fondness of and desire for children, rather than from lust alone, the door is opened for the first time to all sorts of mental influences by which the birth rate can be controlled.

The change brings, also, alterations of a profound kind both in social atmosphere and in the biological constitution of the race. Every child, for its own sake, should be wanted: the soundness of its character, as all psychological clinic work evidences, depends on that. A community where every child is born into a home of love will be able to essay a moral tone not achievable at the present day. But it is in the constitution of the race that the most revolutionary change will appear. Because those who have no reserves of love for children, no adequate sense of social duty and no interest in the future will be childless, primitive strains that have persisted and held back real civilisation for thousands of years will die out. These unsocial qualities are clearly partly environmental in origin, but, like all our qualities, they must have also some basis in the hereditary gene complex, and we may expect some change of constitutional psychological nature leading to a more ready convertibility of the energy of the sex instinct into love of children and into social sublimations, together with a greater endowment in altruism generally and in potentialities of high character development.¹

Universally available birth control, therefore, means the death of the selfish. It means the inheritance of the earth by people of purpose and faith. In it we are contemplating, though few seem to realise it, the greatest turning-point in the history of the human race. It is certainly the event of greatest social significance since the advent of Christianity. From one aspect it is a continuation of Christianity, an extension of its values to the field of the unborn.

¹ This, I take it, was the meaning of America's greatest moral genius, John Humphrey Noyes, when he said, "I can tell just when all this repeating of trouble is going to end. It will be when wisdom and righteousness are fixed in the blood. . . . It is breeding that is going to finish the work."

This social revolution is a highly important one: for the change in racial constitution is not the only significant gift of this new power of control, indeed the environmental change now to be discussed rivals it in beneficence. There has hitherto been one serious and wasteful conflict between the conditions of evolution and the conditions of Christianity. Christianity remained abortive because, in ameliorating the conditions of the living, it encouraged the increase of the unfit and accentuated the misery of the following generation. Some, such as Nietzsche, roundly accused it of destroying more than it created, and a sturdy element in every man's nature has felt the same, has felt that Christianity is a denial of the urge to evolution through strife, that is in our bones.

But with this new control, all is altered. The survival of the best no longer necessitates the reign of tooth and claw: it is ensured by love alone, for if we care for the happiness of those to be born our first concern will be that they shall be fit for the world in which they have to live.¹

They are blind who let the material triviality of birth control deceive them into overlooking the immense changes in human life that would result from making every birth a desired and deliberately planned act. Through a *complete* practice of birth control, extending to the lowermost sections of the population, mankind could leave behind for ever, within the space of this century, the aimless suffering, the vacillating advance and chronic relapses which have characterised civilisation since the culture of Sumeria first blossomed. We could commence life on a new plane, inaugurating an epoch characterised by eugenic consciousness, leading to the breeding of the superman as the common man of the world.

¹ This is not a claim that suffering can be eliminated, but only that it can be reduced and the grosser forms of waste and suffering superseded. Rivalry and co-operative competition between groups must necessarily persist, as our discussion on morals shews (p. 65). In economic and cultural warfare the casualties are going to be not the dead and wounded but the childless, and, in so far as a bad calculation is made resulting in a decision to bear children where heredity and environment are not good enough, the sick and the neurotic. Asylum from the full stress of ordinary life is the relief that can be offered to our casualties in the fight for a higher civilisation.

That is the real magnitude of the thing which is almost within our grasp, but before the building can rise we have to do a good deal of grubbing in the foundations. First of all I hear the cries of those who want to keep up the birth rate even though it peoples the land with idiots. Now it is agreed that within the range of intelligence responsive to birth control we have to develop means both of reducing the birth rate and of increasing it. Moreover, granted a determined attempt to educate the nation in birth control the former process can be left to look after itself whereas the latter requires special study. Only the sub-cultural need to be allowed to reduce their birth rate below the level necessary for survival, yet it is almost certain that the middle section, the average types, if left to adjust their birth rate to income will err on the side of keeping the former too low, as happens at the present day, for all civilised countries are facing an imminent decline in population.¹

The facts of this decline are well known, for our press and the governments of such countries as France, Germany and Italy have recently given the matter ample notice. In England the "net reproduction rate" is about 0.75, i.e. about three-quarters of a daughter is born to the average woman in England and Wales in her lifetime.² At that rate in the next forty years there will be a noticeable decrease in the proportion of children accompanied by an increase in the proportion of old people, and thereafter a rapid fall in all sections of the population. These changes, together with the decay in the mental capacity of the generation now appearing, will, incidentally, combine severely to reduce the enterprise and effectiveness of this country in the near future. However, for the moment we are concerned with numbers only. Population statisticians will point out that the present fall of numbers is serious because, like an avalanche, it will tend to increase as it continues, indeed, nothing whatever that we do now is soon enough to prevent the

¹ With the exceptions of Poland, Russia and Japan.

² *World Population*, A. M. Carr Saunders, 1936.

population of Britain falling decidedly in the latter part of this century. Furthermore, even if the average reproduction rate falls no more the people of these islands will disappear within a couple of centuries.¹ That is a somewhat theoretical calculation in view of the rapid happenings in Europe, but we may at least concern ourselves with the fact that the population of Great Britain will be halved² in less than a century unless some drastic change of mentality occurs. The size of the average family must be increased considerably, to something between three and four children per pair of parents, if numbers are to be maintained. Nervousness about birth control is evidently justified but ill-directed.

Our main analysis in this section, therefore, will henceforth be devoted to discovering what has gone wrong with the psychological and economic incentives to parentage, and to providing remedies calculated to increase the birth rate of the more intelligent.

(ii) *Educational Treatment of the Love of Children.*—First, I accuse education—particularly secondary school education—of dealing with an artificial world, of aping an antiquated classical university education, which diverts interests from normal family life and biological purposes. The fear of sex is partly to blame for this. Another aspect of the attitude thus built up is a slightly snobbish contempt and devaluation, especially among girls, of home life and the rearing of children. This is partly a vicious circle arising because the more able girls get good careers while the less able marry; but it also arises from an unconscious contagion of the attitudes and substitute satisfactions of compulsorily celibate teachers.

Among the unhealthy indirect psychological influences one must mention the absence of the normal training of co-education from large sections of our schools and

¹ *World Population*, A. M. Carr Saunders, 1936.

² See for brief accounts "The Future of the British Race," P. E. Percival, C.I.E., *National Life*, Oct. 1934, and *Planning*, July 1936.

For an authoritative and complete study see *The Struggle for Population*, D. V. Glass, Oxf. Univ. Press, 1936.

universities. The tangible nature of such mental atmospheres is shewn by enquiries which shew that the high celibacy rate which largely accounts for the sterility of the university graduate class is significantly mitigated in graduates from co-educational colleges.¹

But much could be done by direct suggestion in the curriculum itself to bring the bearing and rearing of children back into focus as one of the most esteemed, interesting and important of careers. In Germany the Minister of Education has recently published a memorandum according to which boys and girls in the upper forms are to receive instruction "in suitable fashion" on biological, racial and ethical aspects of the choice of a mate and the rearing of children. The result remains to be seen, for eugenic good, like eugenic ill, is as slow as it is remorseless, but the thing is clearly a possibility.

In spite of the artificiality, from the point of view of biological ethics, of the educational and moral upbringing of most of the present generation of adults, an intelligent minority has worked its way past the point of maximum artificiality and come out on the other side, perceiving that the highest education is one which brings the individual back to simple life values, even though they may be comprehended in a new light. A few well-written periodicals now cater for those who appreciate the birth and proper education of children as the most fascinating of studies and the most religious of purposes. But these people are mainly a small upper middle-class group, generations old in culture: the influence of present-day education on most people is clearly to create a set of artificial values and standards incompatible with our continuation as a race, as the birth rate of the educated shews. This is particularly true of the numerous group risen into the lower middle class, who are too light-headed with the material and educational novelty of their advance to make useful supporters for the new social valuation of interest in children which is sporadically appearing.

¹ See "Coeducational Graduates' Birth Rates," *Eug. News*, 1933, No. 18.

The schools have got to face this matter, but a right slant, a definite eugenic philosophy, in the daily commentaries of the nation's press could do much to enrich the sentiments and eugenic interests begun by school education. To take but one example: the centenary of the birth of some great scientist or politician evokes in the press only retrospective stares of awe and, the ritual of reverence being satisfied, thought goes no further. Does anyone stop to ask what combination of hereditary and environmental circumstances produced so rare a man and whether they might not be repeated? Practically every event in the march of progress is the work of a man of this stamp and could be considered as an inspiration to eugenic effort.

(iii) *The Status of Pride of Family*.—Pride of family is doubtless subject to the same unpleasant distortions—snobbishness, conceit, selfishness—as other forms of pride; but it has also the same essential nobility and can be distilled into the purest self-respect. The more thought a man gives to the qualities desired in his children the more he is bound to appraise consciously the characters of his own ancestors and the qualities of the family into which he is going to marry. Growing eugenic conscience and more universal biological education are alike going to cause an increase, rather than a dissolution, of pride of pedigree and of progeny.

Democracy has taken over many good things from aristocracy, has become in many ways a wider aristocracy having machines as its slaves. The most important habit of aristocracy which it has to take over is concern for the family breeding and the ideal of regarding mating, not as a sentimental incident in musical comedy, but as a sacred trust involving more thought and sentiment than is given to a career. Education must carry the slogan "Every family a dynasty," until the working class, as well as the conscious middle class and aristocracy, knows the dignity of respected family.

(iv) *Eugenics and the Will to Immortality*.—The above are simple and relatively superficial changes obtainable

by direct education or propaganda. We come next to the more subtle and profound psychological forces, neglect of which makes all straightforward propaganda as useless as reasoning with a lunatic.

In modern psychology, and expressed most clearly in the discoveries of Freud, McDougall and Spearman, there emerges a principle that each human being has a definitely limited supply of mental (instinctive) energy. Investment of society's instinctive energies in obsolete institutions is a dangerous, not an indifferent, matter because it impoverishes the energy required for real contact with the world. Intrinsically harmless illusions are in fact always harmful simply because they are costly of energy necessary for biological adjustment.

Our life energy is concerned with its own persistence; it is directed towards immortality of some sort. This necessary and insistent biological urge has been caught up in religious inventions of an after life satisfying not only the general desire but pandering to an attractive perversion of it; individual survival in a most personal form. Our real survival is apparently of two kinds (*a*) Biological, in our children and children's children, and (*b*) Spiritual, in the persistence of our thoughts and actions and their consequences in the body of the social heritage. The religious conception of immortality may be taken largely as a symbolic statement of this second truth, too often taken literally.

Herbert Spencer used to pick up affectionately the volumes containing his philosophy saying that they were his children. From that point of view of duty to society few people can say that their works are more important than their living children would have been. Everyone passes on some gleam of personality into the spiritual immortality of the social heritage in the group mind, but only a few—a Christ, a Plato, a Faraday, a Lenin—pass on such great immortalities that the loss of their children is forgotten. Moreover, even great personalities must die and their sweetness and light be wasted if there is no living biological society of sufficient intelli-

gence to support and appreciate the original thoughts and attitudes they have released.

When we cease to teach illusions of personal immortality, when people grasp that their desire for immortality finds principal expression in their children, then the misuse of birth control will be regarded as the solecism of profound fools and will be rarer than suicide.

(v) *The Artificial Culture of Lethal Ideas.*—Let us follow up some other effects of this kind and consider now methods of reducing birth rates in the right groups by diversion of psychological forces. When colonies were taken from Germany one of the justifying stories of mismanagement was to the effect that the Germans had ruthlessly annihilated with machine-guns a whole tribe of backward and obstreperous savages. It is overlooked that we have done the same thing in more subtle ways. The Americans began by shooting at the Red Indians, but finished them off by loaning them, perhaps inadvertently, their diseases and vices. The South Sea islanders have been decimated by being taught the habits of Western civilisation, habits destructive of their own well-adapted culture on which their living, marrying and reproduction depended. Our upper middle class is similarly annihilating the lower middle class by evoking its envy and teaching it habits of dress, living and amusement which can only be maintained by dispensing with children.

It is thus possible, especially since the days of simple birth control, to kill off classes of people in a wholesale fashion by means of an idea. It would be a very important piece of work by social psychologists—if the country supported any such technicians, which it doesn't—to study these lethal ideas, especially with a view to decreasing the number of sub-cultural persons. Unfortunately one cannot kill with complex ideas people who are incapable of having ideas—the sub-cultural—and sterility, as we have seen, is consequently, in the present cultural chaos, at its highest in the “able” group.

There is no reason why that should remain so indefin-

itely. The lower sub-cultural and defective types may react to nothing but sterilisation and clinically assisted contraception, but the very numerous group of low-average intelligence could be reduced by cultural means. If the lower middle class can be led by the nose by opportunities of leisure and diversion to forget the satisfactions of family life, surely the same can be done with the more suggestible low-average group. Just as the cinema has done more to reduce drunkenness than has any direct attack on drunkenness, so the provision of good standards of living and the enormous expansion of cheap amusements in radio, cinema, sports grounds and popular literature, should go far to create new, diverted investments of instinctive energy which, except among people of sufficient character and intelligence to conceive of child-bearing as a normal social duty, will detract considerably from the effective birth rate.

(vi) *Eugenics, Religion and the Sense of Duty*.—Nowadays, perhaps owing to the confusion of ethics already discussed, there is a reluctance to make anything a moral issue. Searching in the tangled forces of social psychology for the incentives that are going to restore the birth rate, we may easily overlook the straightforward fact that the sense of duty has a part to play.

Galton, at the birth of eugenics, saw as clearly as anyone since that eugenics has to be regarded as part of a religious outlook, and that view has been very ably championed to-day by Dean Inge. Unfortunately the church as a whole has not thrown its weight into this most important of modern movements.¹ Perhaps, in spite of having many first-rate men, its investments of dogma prevent it increasingly from bringing moral force to bear on fresh problems. Most scientists are strongly religious men, but they and their followers can naturally feel little contact with a "tied" religion, and it may be that the moral drives of the scientifically-run,

¹ Observe, for instance, the feeble slowness with which birth control was "recognised."

continuously-developing state will have to be built on a fresh foundation.

In a moral system springing from science—in what I have called “evolutionary morality”—eugenics would occupy a central position, and the confusion which ruins the social conscience would be dispelled. For the ethical teaching which arises from science insists, as Herbert Spencer pointed out, that, “The society which takes as its maxim ‘It shall be as well for you to be inferior as superior’ will inevitably degenerate and die away in long-drawn miseries.”

If eugenics fails to attract the support of a moribund and dogma-bound Church it may yet become eminently enshrined in the secular morality of general education. For the eugenic issue is really not beyond the grasp of the intellects of children, and I have seen an average child of seven comprehend the matter very readily from experience with the breeding of his mice. Perhaps the moral aspect can be put in its simplest form by reminding the adult in the prime of life that he carries with him a debt of care and education lavished on him by parents and the State. If he cannot see that it is his duty to discharge this debt by handing on the same to children of his own he is a moral imbecile. Every intelligent person who appreciates and enjoys the cultured life of a hard-won civilisation should, moreover, reflect that by his failure to breed, in the face of a rising tide of defective intelligences, he brings a relapse into brutality one step nearer.

Only those nations will survive which succeed, as we may yet succeed in this generation, in attaching a distinct moral stigma to those fit, able and reasonably secure adults who avoid the responsibility of parenthood. And we must come to bestow a very genuine social prestige on the parents of intelligent and fit children.

(vii) *The True Use of Patriotism*.—Of the great traditional sentiment motives which should be achieving expression in eugenics, the last that remains to be dis-

cussed here is patriotism. Nationalism is not, as some imagine, a dying cause: it is only transmuting its expression from the brutality of war, armaments and hatred to a friendly but determined rivalry in the creation of the finest specimens of human beings.

When a writer such as H. G. Wells asserts that the confusion of the modern mind arises from a perpetual see-saw between two ideas—that of the world state and that of an assemblage of combatant communities, most people will agree with his diagnosis. But when he insists that the solution is to embrace the world state we may feel that this is a more facile and superficial solution than the true one towards which the world is painfully finding its way. And the explicit discussion of evolutionary morality (p. 65) shews why the solution by racial mixture is superficial and unsatisfactory. Evolution demands not combatant states in mutual hatred, but competitive racial and cultural experiments, distinct but co-operating in a common purpose. That may be reached via a more powerful and evolved league of existing nations and improved international morality, or alternatively through the formation first of a world state which subsequently deliberately splits itself into many sections for experimental purposes; but the world state itself is not the final goal.

We must have “collective control of germs and birth rates” in modern civilisation, but that does not mean a world state in which cultures are mixed in a characterless hash, still less does it mean a breaking down of racial barriers with wholesale miscegenation. Rather does it mean each nation proudly and humbly developing the best of which it is capable in an enjoyed competition from which relapses into wasteful and brutal combat are outlawed.

The coming of eugenic competition between nations is certain in the near future. Attention to quantity of population is the infancy of an idea which will grow till it becomes a jealous care of quality. It is a safe generalisation that at present a dysgenic trend exists in all civilised

countries of the European pattern.¹ Which will gain the great advantage of being the first to pull out of the decline? Germany has the credit of being the first to adopt sterilisation together with a positive emphasis on racial improvement. The Scandinavian countries, Holland and Switzerland are equally advanced in their practice of sterilisation and their consciousness of the need for maintaining and improving inherited qualities. Actually the U.S.A. seems to have been the first country in which sterilisation has been legalised, and it is in the favourable position of spending more on psychological and bio-social research than any other country, thereby providing an "intelligence department" which keeps it exceptionally well informed of the changes that are going on in the population and of the causes responsible for them. But whether the education of the rank and file of American democracy is good enough to support effective action and control is quite another matter. In no country to-day is anything organised which does not lag far behind even a moderate use of the possibilities which the human sciences already indicate to us.

England has been the birthplace of eugenics (if we overlook the premature theorising of Greece). Its population has long harboured a deep sense of the significance of race and breeding, which has, for example, without the help of explicit legislation, prevented in our colonies and protectorates that facile miscegenation with native races which marred the colonisation efforts of Spain, Italy, France and Portugal. Incidentally that miscegenation has frequently struck back at the motherland

¹ Including even the U.S.S.R., apparently, despite its absence of wealth distinctions. Thus, W. H. Gantt, "A Medical Review of Soviet Russia," *Brit. Med. Journ.*, July 4, 1936, writes: "The same disproportion among educated and uneducated, upper and lower strata, exists in the Soviet Union as in the U.S.A., where a lower birth rate is found among the upper middle class than in England. Among fifteen professors and scientific workers of my acquaintance in the U.S.S.R. who have been married for five to fifteen years to women of child-bearing age, there are only five children for the thirty parents, with no more than two in any family. The majority of these were born before 1929. The reasons given for not having children are uncertainty, changed and reduced living conditions, and such-like."

itself, to the extent that in Portugal, for instance, the bulk of the population is decidedly negroid. As Professor Haldane has recently pointed out, the lack of this same sense of the importance of hereditary type may end by causing Italy to be peopled in the future largely by Abyssinian half-castes.

Yet in spite of these initial advantages in outlook and in original scientific leadership, and in spite of the excellence of our technical knowledge in medicine and psychology, this country is a regrettably slow starter in putting eugenic ideas into practice. It is, however, only fair to admit that sterilisation, as the above considerations shew, is not a proper test case of the nation's eugenic consciousness. Let us hope that the most thorough-going eugenic measures and ideals will be first adopted in this country and by the will of a democracy.

For we have the good fortune to start with a population selected in the early days of this country's history by the trial of intelligence, resource and determination required to reach this island over stormy seas. There can be little doubt that as a result of such selective processes it began its career with one of the finest racial stocks found anywhere in the world.¹ History confirms that it has contributed more to social and scientific invention than has any other population of the same size. Despite the recent deterioration and change in racial constitution, therefore, it is probable that we are entering the approaching struggle for high-grade population (and all that that implies) with as rich an initial endowment as any other nation can boast.

We inherit a quarter of the earth and especially some of the finest of the temperate regions, in which civilisation most readily flourishes. We are the bearers of a matchless history and a culture that has given to the

¹ The enormous historical importance, in the production of ability sufficient for civilisation, of selection through the migration of peoples under difficult conditions, needs emphasising. Sieving the original population by even the most modest of "natural examinations" has important effects on the breed, as is shewn very clearly by the work of Ellsworth Huntington, *The Character of Races*.

world some of the things it values most. We are one of the last strongholds of peaceful living, of liberal and humane ideas in a chaotic world. It is still good to be born an Englishman, both on account of the past and of the opportunities vouchsafed us, more generously than to other nations, to do great things in the future. Yet we are content to let our racial quality decay—content to let our culture be smashed by eugenically more determined nations desiring our possessions, rather than engender such a vigorous racial growth as will make such a transfer in the interests of natural selection unnecessary. With but a little application of political thought to the eugenic reinstatement of the breed, Britain could regain that leadership in world affairs which is essential to the ideas of peaceful progress for which she stands and which is fast slipping away at the present moment.

When nations begin to vie with each other in breeding the finest populations the first question which will naturally arise in each group of positive eugenists is, "What shall be the direction of evolutionary change?" One of the commonest rationalisations behind which sloth, prejudice and general disinclination to eugenic action hides is the argument that mankind, unlike the stockbreeder, does not know what are the desirable qualities to breed. Horse and cow, wheat and rose are bred by the geneticist for fitness in regard to some particular purpose. "Who," asks the rhetorical advocate of *laissez-faire*, "would dare to say what are the desired qualities of the superman?"

Now first let us note in passing that this bombshell misses fire with regard to the greater part of this essay, which is concerned with stemming retreat rather than venturing forward; but even with regard to positive eugenics it proves to be more of a smoke bomb than a shell. For the desirability of some qualities is inherent in the nature of the universe (granted that we desire to control and understand our environment), whilst the fitness of others can be decided by experiment. In the first category are health and energy, longevity and intelli-

gence. In the second are temperamental qualities, styles of beauty and physique, stature, etc.

Expanding mental capacity is desired because we are far from being fitted to cope with the complexity of our universe. Again, intelligence is a trait that makes the whole world kin; for men of the most diverse races and types will appreciate intelligence in one another and be brought together by it, in spite of marked temperamental differences. From whatever point of view one approaches the matter there can be no doubt that all races will begin to breed for greater mental capacity. For us there is one verdict only: that mean and limited intelligence must be bred out of the race.

But what of the second category of qualities? I have discussed above the necessity for each nation or group to regard itself as a biological experiment to be worked out. Every nation will obviously exercise its own good right to breed the type of physique, colouring, stature and temperament which it most admires. Confining ourselves to the psychological field we have to concern ourselves with the kind of racial temper, endocrine balance and nervous sensitiveness desired in our population.

Psychology is only on the threshold of a scientific understanding of these traits, and even when it has advanced, deliberate eugenics will have to proceed far more cautiously in their selection than it need do with mental capacity. For the highly strung nervous system unfitted to the crude shocks of brutal war, or the creative temperament unfitted to the easy monotony of industry, may be precisely those which Nature is aiming at in order to produce the civilisation of the future. A wholesale breeding out of the "neurotic constitution" or the insane might well have halved the contributions to art, music, literature and science which we now enjoy.¹

¹ The popular notion of the association of genius with mental instability proves to have considerable scientific backing. High mental capacity associated with an unusual temperament often leads to original viewpoints in fields long sterile. Certain manic-depressive temperaments are associated with great creative ability in art and music. Again, when high mental capacity and

There lies before us, then, an epoch in which states will give far more thought to rivalling each other in the production of fine human types than in the production of armies of uniformed, destructive imbeciles. Their first concern will be, not the number of bombing planes built, but the number of great men in the making, and the race for armaments will give way or subordinate itself to a grander game of groping towards the super-man.

(viii) *The Establishment of a Ministry of Evolution.*—A logical consequence of the immense importance of the question "Whither?" in positive eugenics is the establishment in every nation of a body of medical men, sociologists and psychologists engaged in constant research and in the modification of birth-rate incentives, etc., in such a way as to direct the course of evolution.

In the preface I have given expression to my very genuine astonishment that this investigation to which I have been called is not a State enquiry under the Ministry of Health. The Ministries of Health and Education would seem to be the natural parents for a Ministry of Eugenics which should be engaged in making regular decennial surveys or censuses of the mental and physical standards of the populations and of the factors affecting them. At present they peevishly disown this task, but

nervous instability are *not* linked in the heredity of the genius they often develop an association in the personality through environmental influences. Great gifts put a man out of sympathy with the, to him, futile goals of the majority. Endowed with an easy-going sense of humour—which is his only salvation—he may, like Shakespeare, passively enjoy and record the spectacle of much foolishness; or, like Socrates, drink the cup of hemlock, leaving imbeciles to themselves. But if he seriously cares for mankind his sanity is in danger. And society, which once revered madmen, is now more likely to lock them up. Christ, if he had reacted to the modern world as he did to the cruder call of ancient times, would undoubtedly have been quietly certified as an inmate for one of our palatial mental hospitals.

I am not suggesting that actual madmen should not be locked up and their stock thus eliminated from the race, but I am calling for a great deal more investigation before we begin eliminating from the race those whose tempo of nervous output or whose emotional sensitiveness causes them to be classed as neurotic, and unfit under conditions of warfare or industrial life. Kretschmer's *Psychology of Men of Genius* gives the best short discussion of this matter.

it cannot be denied that attention to the unborn is an entirely necessary and logical termination of the steps that have so far been taken in public health and education. From the relatively static and preventive function of a Ministry of Eugenics the institution could in the fullness of time develop into a more positively enterprising Ministry of Evolution, which, because it would handle the most delicate and important questions of life, would be led by the best brains available from all fields.¹

At the moment of writing there is much talk in the press of "Medical schemes for making an AI nation." No medical scheme can do anything but hasten national deterioration unless it is far more imaginatively conceived, namely, to include a thorough eugenic programme preceded by the formation of the requisite technical department.

(ix) *The Psychoanalysis of Social Melancholia*.—I have left till last what is probably the most important key to the birth rate situation. This concerns investigation of the problems of mental energy and its disposal, problems which, because they are complex, subtle and concerned partly with unconscious processes of the group mind, are most frequently overlooked by the hard-headed statistical sociologist in his search for the causes of the present suicidal birth-rate trend.

¹ The view that such a development is ripe is cogently but delicately introduced by the King's Physician in a recent address from which I take the following: "A vast fabric has grown up, partly medical, partly economic, for protecting and promoting the welfare of the individual from the time of birth to a lengthening old age. The community cares for expectant mothers, for infants and for schoolchildren, who are both fed and educated, and there are services concerned with health, unemployment, widowhood, and old age, to mention but a few examples of this wide embracement of nurture. It is well from time to time to enquire how far this policy bodes well for the future—whether in the desire to help our fellow-citizens to-day we are unwittingly damaging the citizens of to-morrow. We hear much of economic 'planning' to secure the greater welfare of the people. What will this avail unless we give a like attention to 'planning' for a healthy race?" "Medical Science and Social Progress," Lord Dawson of Penn to York Medical Society, 1935.

I am even more clearly forestalled in such a notion by Bernard Shaw who wrote (before I was born, be it again added), "That may mean that we must establish a State Department of Evolution, with a seat in the Cabinet for its chief, and a revenue to defray the cost of direct State experiments."

What follows here demands for its easy understanding some familiarity with basic conceptions of modern psychology on the part of the reader. Without this equipment of the social psychologist no social problem, be it simple or intricate, can be properly comprehended, and without it the pure economic discussions of eugenic motivations, assuming an "economic man," can never lead to real results. For example, the economist's solution for the low birth-rate difficulty is to give people more money in order that they may be able to afford children. But, as more than one amused layman has pointed out, the basic fact from which we start is that the more money people have or earn the fewer children they produce! There are evidently deeper causes.

Let us start by asking, "What do lower middle-class and upper working-class people mean when they say that they 'can't afford' more than one child?" Obviously not that they would have any real difficulty in providing another with food, clothing and State education. They mean that they would have to forgo various luxuries and diversions, and various precious paraphernalia establishing social position, which they find as indispensable as breathing. Young couples nowadays especially dread loss of freedom and leisure.

Now I would argue that these expressed objections to child-rearing are not merely rationalisations of a rank, unconscious selfishness. In the pathetic and desperate clinging to these toys and pleasures there is something akin to the clutching of a drowning man at a straw, something betokening a blind need of the organism to adjust to a difficult or intolerable situation. Therefore, though I would add conscience and a clear sense of duty to the motives which should be aiding the birth rate, I would not consider it sufficient simply to thunder "Duty!" to people who are obviously already maladjusted or neurotic. The average citizen, told to regard child-rearing as a moral duty, is likely to retort that his mentor is a gratuitous prig, that social responsibilities are to-day already more numerous than he can bear, and that he

has his own life to live. We should do better to recognise and study the wide prevalence in modern society of a mild form of mental sickness in which hectic pleasures and innumerable organised escapes from reality have become the rule. In many essentials this collapse of society's will to live, under the pressure of its own culture, is akin to incipient melancholia in individuals and perhaps to the psychosis which makes many animals unwilling to breed in the restrictions of captivity. Therefore to this general state of maladjustment, this super-individual¹ neurosis arising from a cultural atmosphere and from cultural habits which result in an inability to live and reproduce, we may contingently give the designation "social melancholia."

The origin of this condition and its symptoms is evidently to be sought in erroneous and inappropriate elements in the cultural outlook to which education and social pressure mould the individual's originally adequate instinctive energies. In so brief an analysis as time and space permit here the outstanding causes appear to be (1) Too widespread an inhibition and obstruction of instinctive energies by the present development of culture, resulting in emotional stagnation with the growth of undesirable compensatory satisfactions. (2) A further condition acting partly in the same manner, consisting of an excess of confusion and conflict in the present culture, particularly in the moral sphere, and arising principally from the transition between a religious and a scientific orientation of society. (3) Incidental to this, such failures to utilise biological drives for civilised purposes as that described in the earlier discussion on immortality. (4) Ignorant and emotionally wasteful patterns of education in regard to all that arises from the sex instinct. (5) Similarly, failure to develop a social structure and an art of living which uses but does not abuse the self-assertive or mastery drive. (6) Possibly,

¹ It doubtless plays its part also in true neuroses arising mainly from personal causes, but essentially it is impersonal in origin and affects a far larger number of people than those definitely recognised as neurotic.

certain hereditary and environmental maladjustments arising from "warring heredities" in nations undergoing racial mixture.

With these interrelated influences, the nature of which can scarcely be grasped from the above mere listing, I will deal in a little more detail. Cultural confusion could hardly go further than the state in which it finds itself to-day. The religious beliefs and attendant practices of large numbers of people are undermined. Patriotism, which has at times been a simple emotional alternative to religion, is riddled with criticism. Sentiment of any kind is almost as taboo as sentimentality. When our leading institutions have got into a dead-lock the intelligent citizen experiences such a clashing of sentiments, drives and attitudes as to produce in his feelings and actions an unprecedented degree of inhibition. Culture has become like the nagging mother of the story whose constant refrain is "Find out what Johnnie is doing and tell him to stop it."

Increased inhibition is partly a necessary feature of progress, but progress in the main requires a deflection rather than a narrowing of channels of emotional expression. Realistic thinkers and the pressure of events inexorably teach us that the complexity of the modern world makes the older and simpler patterns of sentiment inapt, useless or positively dangerous. But owing to the well-known psychological tendency to fixation, whereby means to an end frequently become a satisfying end in themselves, every culture in time tends to get choked with obstructions and inhibitions imposed unnecessarily, foolishly, for the sake of inhibition only. Civilisations, if they are to go on, need spring-cleaning at intervals. Our age is crying for a Rousseau to clear away outworn restrictions, encumbering values and conventions responsible in part for the melancholia of modern society. With such a release of mental energy there would be a reinvestment in new values, permitting society to readjust itself to and cope with the real demands of its present environment.

This is not to advocate the solution that when culture presses too heavily upon its bearers the repression must be removed in a wholesale fashion. Through the comparatively high standard of suppression characteristic of this country we do at least keep our fools silenced, inactive and without followers, when some other countries are noisy with foolhardy new schemes and sentiments.

Yet it is obvious that the modern world needs a discriminating provision of new loyalties and sentiments if it is to have a healthy and vigorous emotional life, if it is to adjust to new conditions and if it is to avoid suicide. Without them culture is stagnant and the individuals composing a society suffering from social melancholia become miserable and lifeless under the sheer weight of repression. Deprived of satisfying purpose they turn at best to overloading their æsthetic satisfactions, at worst to the opium of sheer sensuality. Then there spring up in society devices catering for such substitute satisfactions, at first in the few, but later, through the contagion of habit and fashion, in the majority. Thus the false psychological habits and values, begun as a *pis aller*, end by having a positive life of their own as agents whereby the instinctive energies of society may be deflected from useful biological ends.

When society becomes shot through with these false, substitute values the young acquire them with their frustrations, before marriage, and find themselves after marriage already possessed of the compensatory values, the satisfying investments and fixations of emotional energy which leave no room for interest in children. Both through these psychological habits themselves and through the economic burden which they occasion there is neither will nor material facility for having children. They must have cinemas, excessive social engagements and motor-cars rivalling those of their neighbours; but children "get on their nerves," as do all things which impinge on a person's life without evoking an adequate positive emotional response.

It may seem far fetched to claim that the revival of the

birth rate is dependent on a solution of cultural confusion, and there is not space here to elaborate the connections in a way which would give more substance to the argument for the reader not familiar with dynamic psychology, but the connection is, I believe, a very important one, and one which should be the subject of extensive research by social psychologists, especially with a combination of statistical and psychoanalytical techniques.

What then are the resolutions of cultural chaos that are most urgently required? They also are a matter for special study. It is obvious that they press most sharply upon the adolescent and are partly responsible for the crises of adolescence, for the average adult has slowly resigned himself to tolerable compromises and compensations. The latter is none the less a maimed individual, a very defective citizen of an unenterprising community, wedded to numerous escape mechanisms and incapable of meeting normal biological standards, as the high frequency of the unmarried and the childless in modern society clearly shews.

First and foremost in the clarification of social sentiments and purposes comes the courageous application of the principles of evolutionary morality to our customs and conventions. With this touchstone we should see, for example, that the unfit ought not to have an unlimited claim on the bank of human resources, and that it is our own good right, second only to consideration for humanity in general, to take pride in the expansion of our own race and peculiarities of culture.

Secondly, we require an adequate psychological study of the social and individual effects of various types of sex education. That our present ignorance in this matter is the cause of much waste in society is clear to every clinical psychologist, who sees many permanent undesirable attitudes, perversions and compensations, to say nothing of immediate emotional difficulties, arising from the practice of attempting to get complete sublimation or suppression of the sex instinct directly at adoles-

cence.¹ Here, for instance, there commonly arise many of those attachments to artificial and fatiguing pleasures, and those compensatory investments of libido in self-assertion through petty social prestiges, or in luxuries, which are found later among the habits of people who "can't afford children." Again, if among the normal incentives to marriage the sex instinct plays an appreciable part, why should we be surprised at a disastrously low marriage rate among those highly educated in an educational system which tries by every available means to deflect the energy of the sex instinct into other fixations? In our greedy attempt to drive civilisation uphill on the energy of diverted sex instinct we have overreached ourselves and are consuming the vehicle itself. The time has come to consider how far the sex instinct needs to be recognised and encouraged in its normal expression.

As a rider on this we may note that unduly late marriage is associated with infertility,² quite apart from the effect of the diminished years of fertility available. Since emotional energy cannot go for years uninvested we have here once more a case of mental energy being tied up too extensively in other fields to leave the individual adequate drives for interest in children. Since the prolonged education which is one of the chief causes of late marriage will always, in a sound community, be given to the better specimens, special measures to overcome this effect are urgently necessary if the differential birth

¹ Anthropologists gifted with psychological insight and training tell us that in other cultures, e.g. the Samoan, having radically different but not inferior sexual education, the emotional difficulties of adolescence are unknown. See, for instance, *Coming of Age in Samoa*, Margaret Mead.

² "Effect of Age at Marriage on Size of Family," R. Cook, *J. of Heredity*, 1935, No. 26. The principle will be found in slightly different guises in the writings of such divergent leading psychologists as Freud, McDougall and Spearman. To the layman the term "self-assertion" is misleading. This mastery instinct, at the root of the desire for attainment and eminence, has been a valuable drive in giving us mastery of the physical world, and in the form of pride of race has been a powerful servant of evolution. It is one of the most valuable of human drives, but is even more plastic than the sex instinct, which it rivals in strength; so that it is capable of being either magnificently sublimated or greatly perverted.

rate is in the end to work in the right direction. Among the small but significant group of late marriers constituted by university graduates the institution of marriage grants, available the first few years after graduation, might have the desired effect, for presumably in this group an enlightened awareness of the birth-rate problem exists and economic obstacles alone prevent a response and lead up to wrong psychological attitudes.

These examples of psychological factors in birth rate lead up to the generalisation that every habitual adjustment to which we educate our citizens should be examined in the light of the psychological principle that every individual has a fixed total of mental and emotional energy, so that every useless investment, no matter how harmless it may be in its direct effects, is a potential social and individual danger. There are biological accounts to be balanced and the denial of a useful investment by an ignorant system of education may mean both the creation of a dangerous tension and the incitement to a false investment.

This does not mean that Nature has been so parsimonious as to allow no energy for wastage or for play—these are necessary and inevitable—but it does mean that we should watch carefully any systematic leakage of energy in directions that have no relation to biological realities as they confront the individual and society. It is surely no fanciful thing to add to the generally accepted notion of constancy of libido or mental energy the further principle that this energy is normally the adequate amount required for the organism to meet the demands of its environment, i.e. to continue in a satisfying way the life of the individual and the race. In man and the mammals this energy expresses itself through the channels of several instincts, each coping with one aspect of biological requirements, e.g. food seeking, fighting and escape from danger, mating and the care of the young. Psychologists are disagreed as to the extent to which these modes of reaction are innate, but they are at one in finding that there is plasticity in the disposal of mental

energy, so that to some extent the instincts may be regarded as mutually competitive in drawing upon a common fund of reactivity.

Now we are reaching a stage in civilisation when children are begotten through other than sexual motives, yet through birth control we are leaving a good deal of the energy of the sex instinct to express itself in a biologically purposeless way (except in so far as the love life of the parents has bio-social value for the child and for society). Is it not possible that here, in the cancelling of an important expression of biological energy from effective use, lies one of the chief reasons why, even in societies which have settled down to an intelligent and eugenic use of birth control, the reproduction rate is not high enough to maintain numbers? This principle, which we may call the principle of conservation of biological energy, needs further investigation: contingently it points to the probability that sexual energy should be sublimated as completely as possible into the other drives that are now responsible for the production of a family, so that the demand for contraception as such is diminished in the life of the individual. This conclusion is not irreconcilable with that concerning sexual education made above (p. 152), at any rate with a skilled educator.

Among problems of the misuse of motive involved in social melancholia we are now left only with the question of the self-assertive instinct (items (5) and (6) on our list), and the study of this will lead us to political rather than merely educational considerations. Many eugenicists and social statisticians (Major Darwin and Professor Fisher, to name but two) have long been convinced, and have produced adequate evidence for their convictions, that one of the main causes of excessive restriction of family is the desire to rise socially. Hence not social status alone, but the possibility of favourably altering social status, will be found as the deciding factor in differential fertility. Thus the mastery instinct has been caught in a trap of social rivalry and become diverted to

biologically destructive ends. Our middle class may be said to be committing suicide in the name of self-assertion perverted to snobbery.

The chief mechanism at work here is that the small family or the only child can be given unfair advantages relative to children of equal promise found in families of racially adequate size.¹ Since wealth, or the better education which can at present be bought by wealth, are as effective as, or more effective than, natural talent in commanding positions of control and prestige which constitute high social status, infertility is an asset in upward social percolation.

From this a peculiar effect follows, which has been revealed by Fisher's original and adequately extensive researches.² The tendency to infertility is shewn statistically to behave as if it were inherited. Consequently the intermarriage in the upper social strata of those who have arrived by ability and those who have arrived by infertility links the two in one inheritance, condemning the community's high ability to rapid extinction.³ Probably there are other associations of desirable and undesirable brought about in this way: for not all qualities leading to social success are moral or useful ones.

Everything points to this inherited infertility being the handing down of a social attitude, perhaps deeply psychologically ingrained, rather than any true physio-

¹ An illustration of this was found in the intelligence test results from the public school (p. 11), where, on an average, only children were slightly less intelligent than the others, because they come from less able strains which would not get to a public school or university without the financial good fortune of being only children.

² R. A. Fisher, *The Genetical Theory of Natural Selection*, 1930.

³ The same effect has been shewn by Wagner-Manslau in Germany (*Bericht des Internationalen Kongresses für Bevölkerungswissenschaft*, Berlin, 1933). Daughters from large families were unmarried only at the rate of 10 per cent of those from small families. The married daughters have on an average 0.88 children more when they themselves came from large rather than small families. The newer nobility tend to marry into richer families of slightly lower class. The largest dowers are found with only daughters. Consequently, as Wagner-Manslau shews, the later nobility is becoming increasingly infertile, whereas the older nobility, which intermarries within its own group, remains quite adequately fertile.

logical inheritance.¹ We are dealing with a *weltanschauung* of false values, created by the perversion of the human mastery drives into the game of social climbing. This infertility tendency is inherited most through the female side, a finding in accord with the common observation that it is the attitude of the wife which is most responsible for deficient birth rates to-day.

Psychological clinics have long warned us of the increased prevalence of neurotic conditions which will result from the greater proportion of only children in the next generation, and now the eugenists are rightly pointing with equal alarm to the infertility which hangs like a cloud around the unfortunate only child and the members of very restricted families. The thoughtful citizen may well avoid the "only" daughter as he would the plague!

Eugenically, social stratification has, therefore, both advantages and disadvantages. Its advantages are that it acts as a sifting device² and that it provides a basis for birth-rate recommendations if these could be put into effect. Its disadvantages we have just seen. There is a further related one: the historical observation that when layers of able and enterprising invaders impose themselves on a substratum of natives of an inferior capacity, it is the latter who survive in the long run. The blood of the ground type creeps into the next layer above and thence into the next, and always it is the more obstinately fertile.³ Biological perspective must come to our aid. If we live in one community we have a common immortality: in a few generations the blood of the aristocrat

¹ The most that has been substantially claimed on the side of physiological inheritance is that we are dealing with the inheritance of liability to excessive pains in childbirth, due perhaps to anatomical type.

² It tends to bring together relatively quickly all kinds of biological disabilities and defects in the unfortunate "social problem group" which would provide a channel for them to be drained out of the race if this group were given adequate care and clinical birth-control assistance. At all levels it assures some degree of assortative mating so that good qualities can come to fruition through reinforcement.

³ The highest caste in India, for example, is not as white as its European forbears.

mingles with that of the despised slave and all the ambitions of individual and of class are vain, because they have no permanent value for the race.

What is the remedy? to scrap social stratification or to attempt to purge it of eugenic and other evils? For if it continues much longer in its present form, with the existing differential birth rate, it will scrap itself and civilisation with it. In a communist state, since parents cannot give special advantages to their children by restricting family, one might expect the effect to disappear entirely (though no positive eugenic trend need take its place), but the observation I have recorded on page 141 of this chapter, suggests that there is still something in the nature of the education of the professional workers which reduces their fertility.¹

Abolition of social classes may be an heroic but not a complete cure for the disease. Moreover it is certainly not the only one. Granted measures which always give full opportunity to the able child, no matter of what parentage, and granted an education of parents which makes them see that a disservice is done to the happiness of the child by putting him into an occupation for which his intelligence is not really adequate, granted further a reduction of the variability of innate capacity by an elimination of the lower levels, and there remains only the establishment of the philosophy that "a man's a man for a' that" to produce a society in which individual differences and differences of social status (they will then be merely differences of occupation) are shorn of their deadly dysgenic effect.

There remains the moot question as to whether racial mixture is a factor in infertility. Professor Gates,² Professor Mjoëns³ and others have shewn that anatomical and glandular malproportion is liable to arise in racial

¹ To this indication of a birth rate differing for "social status" in Russia, one must add the evidence of Blonsky (*Zsch. f. päd. psychol.*, 1930) that it also differs for intelligence levels. He found Russian only children to be of more than average intelligence.

² R. Ruggles Gates, *Heredity in Man*, London, 1929.

³ See *Psychology and Social Progress*, R. B. Cattell, p. 63.

cross-breeds. In races whose hereditary complex of genes has been evolved in widely different conditions it is likely that one result of the resulting malfunctioning will be decreased physiological fertility. We are at least familiar with the absolute infertility found between most species and in the offspring of such species as prove fertile in a first cross. But the matter has been included in the present section because it seems likely that infertility from psychological causes may arise from this source.

Professor Kretschmer has shewn that some degree of mental instability, giving rise to neuroses and the often bizarre originality of genius, seems to arise more frequently where "warring heredities" are found through racial mixture.¹ But apart from the effect on the individual it is possible that the clash of values in social thought in a nation of divergent racial origins may itself act as a disturbing influence on fertility through the unsettling of well-adapted cultural habits, in the manner discussed in connection with "social melancholia." In nations where diverse racial constituents may be about to intermingle, as in America, Germany and England, this factor is at least worthy of investigation.

To summarise: it has been the main contention of this section that, in spite of our material good fortune in comparison with other ages, our population does not find the complexity of life so satisfying that it is prepared to bring children into the world in adequate numbers. The reality of this unhappiness can be seen equally in the suicide statistics and in the writings of philosophers, for so sympathetic a social observer as Bertrand Russell writes: "Life, at all times full of pain, is more painful in our time than in the two centuries that preceded it." The accumulated burden of our dysgenic practice of keeping every form of misery alive may be partly responsible for this, but the main causes have been dealt with, I believe, in the above.

¹ E. Kretschmer, *The Psychology of Men of Genius*, 1931.

4. PERSPECTIVE ON MEASURES IN A FIRST ATTACK

Our aim is to produce a eugenic differential birth rate, and an average number of children per family of between three and four¹ in the general fit majority of the population. Only such a birth rate would at present keep the population at a stable level. We cannot expect a further appreciable fall in the death rate, and though celibacy, age at marriage and childlessness may be decreased in some strains they will need to be increased in others. For we must not forget that most genetic variants, being chance variations in physical structure, are bound to be bad. Consequently even with eugenics many more people need to be produced in one generation than are intended as parents to breed the next generation. How many more we do not know until research has shewn the frequency of good and bad variants, and policy has settled the standard of "unfitness" at which it is undesirable to breed.

Looking back on the measures set out in this chapter for fighting the decline of intelligence, I am inclined to estimate that the economic steps, though necessary, will not in the end be so effective as the social changes in moral and mental outlook producible by education. But here I must leave the matter to the careful research findings of Professor Carr-Saunders² and other workers, and to the ripe experience of eugenic problems which gives such weight to the judgments of Major Leonard Darwin in his work on "Eugenic Reform."

At any rate it is clear from the enquiries of Dr. Glass³ that in Germany, France, Belgium and Italy the economic measures alone, and the straightforward hammering of exhortation, suggestion and persistent publicity which accompanied them, have failed to produce the desired

¹ See calculation of Enid Charles, p. 41. Allowing for sterilisation and higher standards of selection for parenthood in general, it would seem desirable to consider four as the normal size for a healthy family.

² See in particular Carr-Saunders' Galton Lecture 1935 on "Eugenics in the Light of Population Trends" (*Eug. Rev.*, 1935).

³ *The Struggle for Population*, Oxf. Univ. Press, 1936.

effects. In Germany there was at first a decided rise in the birth rate which impressed many people in that country,¹ but it was not maintained for more than a year and the birth rate appears to be back where it was. It is not surprising that physicians of social diseases who are so stupid as to aim at increasing numbers at the cost of quality should fail to think of anything better than the goad of a tonic to improve the condition. Stronger medicine of the same kind will yet only produce a momentary effect.

It is obvious that serious attention by a research committee of psychologists, economists and sociologists should first be given to get a correct diagnosis of the factors in the malady. The above is a working diagnosis drafted because the need for action is urgent. Its analysis represents, I think, a marked advance on the governmental methods of the continent (except that they are not yet adopted by the government!), and are humanly certain to produce a trend in the desired direction. The most important measures are those which act on the greatest number of people, and for this reason the economic encouragement of the able child (Measure 1) is the most urgent of the economic measures.²

Scientists are so divorced from the government of this country that the application of their findings (except on death-dealing inventions) is apt to lag absurdly. It should not be necessary to regard their steps as party issues, but if for the sake of action that must be done

¹ See, for example, Percival, *op. cit.*

² Dr. D. V. Glass concludes (*op. cit.*, p. 91): "If there is to be any significant increase in the birth rate, the major part must come from the working class. Consequently no action is likely to have a permanent influence unless it provides conditions in which the working class is able to bring up children without thereby suffering from economic and social hardship." This considers numbers only. If we consider quality it is still true providing we substitute "skilled working class" for "working class." Some people by "working class" mean "unemployed." It is obvious (see Diagram VI) that there is a great range of ability in the working class—from packers and sorters to elementary school teachers—so that the term has little value. Discussion will only be possible when writers begin to recognise the large economic, educational, intelligence and social differences between the various grades of working class. A high birth rate in some is most desirable, in others not so.

then it is obvious that some of the above measures will appeal to one party, some to another (e.g. among the economic measures, school allowances to the left wing; income-tax allowances to the right). Most scientific notions must suffer themselves to be thus dismembered, for no political party has the whole truth or is concerned with the good of the country as a whole. The scientist cannot become a political leader, he can only hail the new political leader who will appear armed with the wisdom of science. Our hope lies in the growth of a nucleus of well-educated men in the Houses of Parliament.

The very real urgency of the situation created by the falling reserves of mental capacity may direct us to look for an immediate machinery of political action, but in the long run the battle for eugenic progress will not be won by expedients; it will be won only when the eugenic movement becomes part of the texture of our national life.

There is no reason, save the fear of novelty, why it should not become a clearly understood and vital issue in the life of the common man. Because of its creative intent and amazing possibilities it should grip the imagination of the best of our race.

Perhaps eugenics has been slow to come into its own because, until recently, it has been too exclusively the project of older men. And though they have been exceptionally fine and wise old men they could not expect to capture the key positions of national interest without a spirited battalion of youth to assault these objectives.

Inevitably so profound and harmonious a perspective of racial purpose would come first to men and women whose high intelligence had sifted away, through long years of varied experience, much dross from a little gold. For in the end all must come to realise the absurdity of attacking evil and the frustrations of human life in a continuous petty guerrilla warfare. Our boasted progress and reforms are often only the digging away of what is continuously silting up. Our individual enthusi-

asms for this party and that, our deathless hates for particular oppressions or abuses, our personal vendettas with evil, malformed mentalities, our chance attachments to this political symbol or that meaningless programme, our revolutions that establish nothing (for do not men always return to equally crude stupidities and hardly less inane idols under new names?)—all these constitute the merry-go-round of men who act but do not think; and bring the world not one step nearer to better things. Only by improving man himself can man's world improve.

If in every man there is at bottom a desire for good, the only real and persistent springs of evil are stupidity and ignorance, in their widest ramifications. The wisest of the last few generations came to that truth and they struck a giant blow at ignorance. It is for this generation to banish stupidity—defective intelligence. If only all our wandering Don Quixotes, tilting at various poverties, villainies and abuses, could be brought to level their spears at this real foe!

To-day youth, through the progress of biological knowledge and education, is admitted early to the depth of vision hitherto gained only by the old, and permitted to attack eugenic objectives whilst its vigour is still fresh. Great things, in terms of human history, are waiting to be done by young men and women of brains and ideals, and especially by those fortunate in possessing money and leisure. What more tragi-comic, therefore, than to see in this age young men and women possessed of ability and money¹ playing with aeroplanes and other toys; or so deficient in imagination as to seek "adventure"

¹ One generous donor to public needs, Lady Houston, gave £100,000 to help us win the Schneider Trophy Aeroplane Race, as contrasted with £2,000 to malaria research, and precisely nothing to psychological and eugenic research which can alone improve the real quality of the people. The enterprise of local authorities of individual cities and counties could give material help here as it has done in other pioneer movements in national life. For example, before the Hadow Report inaugurated the new pattern of school organisation throughout the country, the effectiveness of that organisation had already been proved by a working experiment of some years' duration carried out by the progressive city which it is my good fortune to serve. In this step the

by roaming from a cinema in Balham to a cinema in Quito; or so completely uneducated that they stare around in vain boredom for something adequate to try their mettlesome spirits. The Elizabethans did not achieve by aping the medieval world and the achievements that make history to-day are in a field of adventure unknown to the Elizabethans—that of adventures in human biology.

Eugenics is calling for its pioneers. It is a cause, like all great causes, that needs even its fanatics, who will wear down, by their inspiration, the multitude's defence of dingy "common sense." It needs political leaders who can look at the cold, intellectual analysis of causes and effects, the psychological dissections of social motives, made in a treatise such as this and translate them into slogans and warm-blooded responses making intelligible contact with the daily purposes and domestic ideals of the average elector.

Since to most people one living example is more convincing than a thousand descriptions, a bold experiment in the form of a practical eugenic community—especially through the example of one of our cities adopting eugenic measures, proving by its prosperity and the brilliance of its sons the fundamental soundness of its policy—might be the surest means of turning the scale against that national decline which now has the balance of probability on its side.

We have to bear in mind that a real deterioration of our race is going on here and now, day by day, hour by hour. Even though we go to meet it at once its momentum is such that things will get worse before they begin to become better. But its presence being now clearly proven and unmasked it can be attacked. In this generation the campaign has been launched: the fight is

Director of Education was naturally opposed as a meddling and even dangerous innovator; but his overcoming the practical difficulties of a particular case probably did more than all the writing of books on the subject to make possible the acceptance of the steps advocated in the Hadow Report. The same is true in regard to the progress of a eugenic campaign.

on. An organising headquarters for grappling with this enormous, spreading evil already exists in the Eugenics Society: let us hope one will soon arise in the Government of our country.

Meanwhile the struggle will not be won by firing a long-range gun at a venture as I do here. It will be won by men and women fit for the hand-to-hand fighting of committees, with stamina to carry the struggle into the dust and heat of social-welfare work in sordid cities and with courage to face what may at first be a withering fire from strongly entrenched ignorance and sloth.

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