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Tocher, J. F. 1864-

Publication/Creation

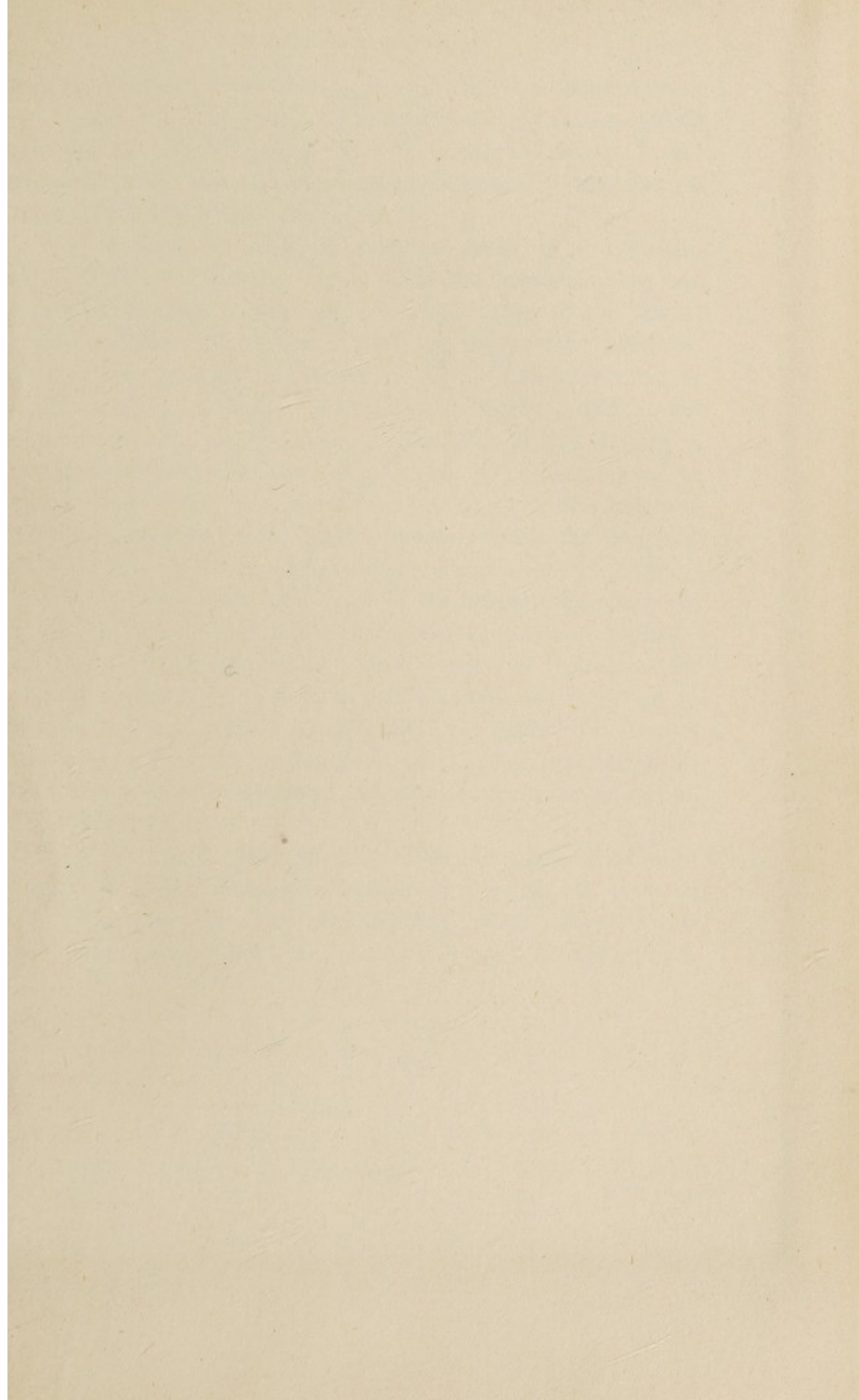
[Place of publication not identified] : [publisher not identified], [1910?]

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THE NECESSITY FOR A NATIONAL EUGENIC SURVEY

By J. F. TOCHER, B.Sc.

WHO in the land can say how we stand but from deeds well done, not from things well said?

This Empire rose because, in these Isles, there was stuff in the race for the fray.

Craftsmen and Thinkers, Statesmen and Kings, they are born of the stock, never made.

From of eld this truth flashes down through the years to the fleeting hour of to-day.

Great as the debt is we owe to the living, it is nought when compared with the vast,

The unreckoned sum of the debts we owe to the still, strong folk of the past.

May the race never lower its standard of worth, nor depart from its onward tread,

Seeking alway the Truth, breathing Hope on its march, saluting its Mighty Dead!

IF there is one fact more than another which, in human life, is continually obtruding itself on our notice, it is that we must act or fall behind, we must act or succumb. From the moment of appearance to that of disappearance, we do act in an infinite variety of ways. The nature and amount of individual action are measures of our character and specific ability. These—the nature and the amount—are conditioned, in part, by our environment, and, in part, by the action of others of the present and the past, in the shape of laws and observances; but they are chiefly due to our own inherent individual characteristics. In the mass, the product is Society, and our concern as eugenists, our object as reformers, is to work towards a state of Society where the action of individual units, as a whole, shall produce stability in the community, and where the individual units are

fitter and happier, on an average, than they are to-day—so fit, indeed, that disease shall be rare and so happy that unmerited suffering shall be quite unknown. If that still far distant goal be ever reached by mankind, eugenic thinkers agree that it must be reached by the reasoned action of the leaders of our race and of those in power, after facts tending to circumvent our object have been disclosed by a searching analysis of data, and after the laws governing the establishment and continuance of a more physically and mentally healthy human breed have been definitely ascertained.

It has been truly said, here and elsewhere, that Eugenics is no new conception. Just as is the case with atomic structure and movement, so with social structure and movement we appeal to ancient history and find the concepts there, and, among small communities, a certain amount of practice there. The common ground of Dalton and Galton is the direct application of great conceptions to actual facts they and contemporary workers were studying at the time. As Newton and Darwin had, so had they experimental bases for their epoch-making generalisations. I take it there would have been no science of eugenics to-day had Francis Galton not made his famous observations on the physical and mental characters of Man, and demonstrated to the world their heritable nature. The advent of the science would have been postponed. Who shall say what this postponement would have meant to the British people and the world at large? The altered conditions of life, due to the advance of science and the consequent change of view of responsible men, have introduced new social factors of a perplexing and complex nature. The occasion has produced the man. I do not say that the principles of eugenics are not applicable during all the stages of a nation's history. I take it that they *are* applicable, but that different phases require different treatment. Consider two communities. A rapidly-increasing community, many sickly, weak or useless members of which are nursed by a benevolent nation to the reproductive period, and who thus perpetuate their kind, on the one hand, and a hard-pressed, active but poor community, on the other hand, fighting for rights or for its life, and leaving, because it cannot do other-

wise, the weak and the useless to disappear before procreation. We should never think of recommending the same treatment to both. In the latter case, Natural Selection is helping the race, and the eugenicist would think most of positive eugenics—the production of the fit. In the first case, which is I am afraid our own case, we must think of both sides, the positive and the negative, the production of the fit and the elimination of the unfit. Let me cite an example. In the histories of both England and Scotland there was a time when internal and external struggles both retarded the growth of the population of each. England was in a chronic state of war with France on the one hand and with Scotland on the other. Civil war was common. The chief trade, the sole profession of the male population of Scotland, during the wars of independence, was that of arms. At least seventy-five per cent. of those able to bear arms in Scotland, on an estimate of the population, must have been present at Bannockburn. English history, at momentous periods, is very similar. There was no wealth, no luxury; everything tended to the survival of the fitter—the ravages of Natural Selection must have been very great. Populations do not appear to have increased; they must frequently either have stood still, or decreased. A vivid picture furnishing the truth of this is depicted by the various writers of the Statistical Account of Scotland. Stout men worked for a few pence a day and many could scarcely earn their bread. This means little or no provision for weak children. Only the strong could survive through the recurring years of scarcity, and we know from accounts from many parishes, that hundreds of families were extinguished by famine. The Scotch of those days would want, rather than receive the voluntary aid, which was the precursor of the present system of parochial relief. If it is the case, as is averred, that high proportions of men of ability spring from certain areas of Scotland to-day, to me the reason seems to be because only physically and mentally powerful stocks *could* have survived the unique ordeal Scotland had to pass through in more than one stage of her chequered history. All this may be ancient history and very ancient history, but it is necessary, in this age of luxury, frequently to call to mind these facts, especially if they

have a bearing on those who are living to-day in the land, and particularly if there are evident facts, leading us to suspect that, although conditions of life are vastly improved, there is a startling and probably increasing proportion of unfit, evidently saved from destitution and worse by the kind hand of a benevolent State.

Foremost and most important among the evident facts which ought to lead eugenists to direct public opinion to this state of matters, we must class those disclosed by Professor Pearson and his co-workers in the Galton Laboratory and elsewhere. As interested onlookers, we cannot but be profoundly impressed by the great volume and sometimes startling nature of the results. Their publication cannot fail to influence social leaders throughout Europe and America, to accelerate the formation of public opinion in favour of eugenic principles and to stimulate the movement in favour of the collection of further data—national data. It is as an advocate of an organised general collection of data and, in particular, of an organised National Survey, that I pen these lines. We cannot, all of us, hope to attain the standard of training necessary to make a reasoned, thorough and sound analysis of facts bearing on the national weal. We may hope to follow at a certain distance, and we shall be fortunate if we succeed in grasping fully the meaning of the striking deductions as they are, from time to time, cast upon a still somewhat deaf public ear. We know all national progress is and must be slow. But we can always seek to induce friends to impart information and we can, at our leisure, collect facts ourselves. Our difficulty may sometimes be just what to collect. That in the main must, I think, be suggested to us by the man who has the problem to solve. There must be, and there is, a bond of sympathy between those who dissect and those who look with interested eyes on the operation of dissection and who can often furnish the materials. But I go much further than merely to suggest a continuance of leisurely collection of facts. Private individual effort, after all, cannot supply figures representing the entire nation and covering the whole field. I therefore go further and advance the idea of an organised national survey on definite eugenic lines. In other words, I should like to see carried out, as complementary to

medical inspection, a National Survey of the physical and mental characters of the school children, together with an enquiry as to their home conditions and, as far as possible, from existing data and from new data, a concurrent enquiry respecting certain specific and more readily ascertainable facts bearing on their parentage and more immediate or near ancestry. I am aware that what I am advocating is a survey of great magnitude and one which calls for careful planning on the part of the organisers, immense labour generally and great care on the part of the many who must of necessity take part in the great work. I am also fully conscious of the fact that, if undertaken, much thought must be given, by those who would be responsible in directing it, in formulating the general plan, in order that the survey should be carried out, not only on a uniform system but on a sound system based on the experience of analysis, by competent persons, as to good points and bad points in the commendable, voluntary, pioneer, local surveys already carried out. Of course, in suggesting this survey I am only developing ideas already expressed elsewhere. The proposal has the merit, as I consider it, of not being an entirely new one. It is perhaps on more definite and restricted lines and is advanced at a more opportune time. The method and the means of carrying it out must both be practical. Before discussing these, let me anticipate some possible objections and look at the proposal in the light of experience of local surveys.

An objection which may be urged against it is that medical inspection really covers all that is wanted, in a practical way, to improve the national health and weal. At first sight this may appear a sound objection, but it is not really so. I admit that great insight as to the general health of the nation can be gained by medical inspection, and a measure of improvement effected as the result of it. I also admit that the term "medical inspection" can be used to cover the range of the National Survey I am advocating. But I use the term in its generally understood sense, and we must bear in mind that medical inspection has a personal application in the eyes of each parent—an attitude which is distinct from that of the eugenicist or that of the State. Most parents are interested, and all parents ought to be

interested, in the medical officer's report. A child is found to be suffering from eye-defect, sufficient to retard the progress of the child at school. That is the parent's standpoint. Some defect of nose, throat, ear, teeth, bodily condition, or the presence of some disease or deformity has been detected. Instantly the thought arises in the parent's mind, or the thought ought to arise in the parent's mind: Can the trouble be removed? Medical inspection, from the parent's standpoint, is, purely and rightly, a home interest; in the eyes of the medical officer and the local authority it is the health of the school; in the eyes of the State it is the health of the rising generation. If any of our children are unfit to take part in the ordinary duties of school life, medical inspection will tell us. It ensures that our children are called upon to do, at school, only what they are physically fit to do. Much therefore follows, as the result of medical inspection of schools, in the shape of alleviation of suffering, less strain, and the prevention of injury to undeveloped bodies and minds. Consequently, there is bound to be a real improvement, on an average, in the health and general physique of the school child. The question now is: Will all these improved conditions of body and surroundings of the present school child have a real, lasting, beneficent effect on its offspring, in the next generation, when the present improved school child reaches parenthood? "Yes," replies some ardent social reformer. "Let us ascertain the factors which lead to the production of fit and healthy offspring," replies the cautious eugenicist. And so we have a battle royal raging round the standards of "environment" and "inheritance." The achievements of medical inspection will occupy an important but, necessarily, a well-defined and restricted field, if, after all, the improvement of offspring, due to better environment of the parents, is negligible, compared with the improvement of offspring, due to the denial of parenthood to undesirables and to the mating of fitter stock—that is, to a selection of the parents.

The adoption, in their entirety, of measures recommended by medical inspectors would still contribute to the effacement of diseases which are curable and of defects which are remediable. Each generation would, however, have the stiff battle to fight

which this generation has to fight, for we are applying a cure to the disease instead of embracing the axiomatic principle that "Prevention is better than cure." This means that, while we must still prosecute with vigour the medical inspection of schools, we must also turn our attention and our hopes to a national eugenic survey, of which medical inspection is a very necessary part. That part—medical inspection—need I reiterate, is the supply of very necessary information as to the general health of the school child, of value to the parent and of value to the State, *and the application of direct means to improve the health and physique of those who are so unfortunately born as to have had transmitted to them poor physique or to have been reared in unfavourable conditions, or both.* The other and complementary parts of the national eugenic survey, which I think we should all strenuously advocate, are the study of the physical and mental characters of the school child, on the one hand, and of its parentage and home conditions on the other, in order, among other things, to ascertain the best means of *securing the birth of children of good physique*, in the most favourable surroundings, and their rearing under the best conditions for each case. That is, the national eugenic survey, to be complete, should be medical in part, sociological in part, and anthropological in part. The *collation* of the facts from these sources will confirm, or otherwise, contested views, and warrant in general this projected stocktaking of the youth of the nation.

In order to show that medical inspection is not all sufficient, one must justify the collection of sociological and anthropological data. The collection of sociological data hardly needs justification—indeed, it may be urged that medical and sociological data have been, for several years, collated at the Francis Galton Laboratory, and that many of the doubtful points respecting environment and inheritance have, in consequence, been made clear. It is precisely because these pioneer investigations have been carried out that I now urge the collection of data on a national scale. A study of the memoirs of Miss Barrington, Miss Elderton and Mr. Heron clearly proves that sociological observations on a national scale are highly desirable. As the authors state in their memoir on the "Inheritance of Vision,"

their analyses of the errors of refraction and other visual factors among children in Glasgow, Edinburgh and London is the first eugenic study in which the relative influences of inheritance and environment have been compared. Their conclusion is that environment as a factor will not upset improvements effected in breeding good stock, but the breeding of bad stock will lay low all schemes for improving environment. They point out the urgency of obtaining a standard population which has not been selected with respect to the defect or character considered, and they suggest adaptations of the methods of measurements to the requirements of the eugenic investigator. Miss Elderton's analyses of the observations in Edinburgh by the Charity Organisation Society, and of Glasgow data, on the effect of home environment on sight, intelligence and other characters, show a small influence from environment—that is to say, the sight or intelligence of the child is only slightly affected by bad economic, physical or moral conditions of the parents. Such effects as are found to exist are only very secondary to racial or hereditary influences. The remarkable conclusions reached by the authors during the course of their study of the influence of parental alcoholism on the physique and ability of the offspring, are sure to attract the attention of social reformers. The fact that they found no marked relation between intelligence, physique, disease, or mental defect of the offspring, on the one hand, and alcoholism in the parent on the other hand, is a striking confirmation that an acquired habit of the parent has no *perceptible* effect on the *immediate* offspring, and is a still further aid to us in preparing for a sociological survey. It should be noted that this is quite a different problem from one where centuries of alcoholic excess on the part of successive generations of parents is considered. Finally, let me draw your attention to the exhaustive statistical examination by Mr. David Heron of the data collected by the London County Council, in which he shows that only slight connections exist between the mental capacity of school children and the factors which denote physique or home environment. These confirm the other results, already cited. As you know, Mr. Heron found that nurture, environment and physique had little effect on intelligence. In his

treatment of the data he shows the need for knowledge as to the racial constituents of each population considered. What is of considerable importance to us all, in the event of a national survey being instituted, is the fact that he found evidence of much personal equation in both teachers and medical officers. Two remarks fall to be made with respect to this. The first is, as Mr. Heron observes, that careful verbal definitions of classes or categories of each character should be given. These of course, for the national survey, should be uniform for the whole country. The judgment and classification by observers should be standardised. The second is that very large numbers such as authorities would be handling in the national survey, would reduce to very small compass the personal equation of the observers. Thus more accurate results will be got from the national survey than have been got from any of the highly commendable, pioneer, local surveys. These accurate results, confirming or otherwise the Eugenics Laboratory results from local surveys, are what we expect from the sociological section of the national survey. But we would get more than these results. The relative proportions of bad stock in every local area throughout the United Kingdom would be definitely ascertained; and the relative qualities of good, bad and indifferent stock would be given. All bad stock is not equally bad. All good stock is not equally good. We should be able to institute a *grading of stock* which is sure to prove useful.

I now pass to the anthropometric and more strictly biological section of the proposed eugenic survey, for the purpose of showing its necessity. Without doubt we must consider race and the relative longevity, fertility and mortality of each of the constituent races and septs in the community. It may be urged against this section that, to be complete, one must measure and study the whole adult community. I admit at once that an analysis of adult measurements would greatly aid us. But much—a very great deal—can be done by observation on the school children, and these observations can be much more readily carried out. In other words, an anthropometric study of school children is within the region of practical politics. In this connection let me draw attention briefly to how far we have marched since

Francis Galton first gave us the results of his analysis of the physical characters of Man, which involved the discovery of the degree with which they are inherited, or the phenomenon of regression. We knew nothing, thirty years ago, of the real manner in which stature, size of limb, mental ability or any character whatever in a population of like individuals, was distributed. We now know definitely the nature of the distributions, and Prof. Pearson has given us a splendid weapon whereby, by using it, we can accurately describe them. We knew very little, thirty years ago, from actual observations, how far physical and mental characters are inherited. We now know definitely, for most characters that count in eugenics, the degree of resemblance between relatives near and remote, and thus the extent of the inheritance in each case. Again, take Natural Selection as applied to Man. The problem is: Is it really the case that the enemies of human life, such as epidemic disease, due to other living organisms, the ravages of war, the injurious effects we inflict on our own bodies during life, and other results of will and accident—do all these causes fully and entirely account for human mortality, not accountable by sheer old age or senility? The answer is No. The proof to the negative was given many years ago and has been several times demonstrated since. These more or less fortuitous causes do not entirely account for our experience of mortality. Indeed, if it did, mortality tables would show an entirely different distribution of deaths at different ages. The duration of our lives depends not only on our successfully evading death from purely fortuitous causes, but it also depends equally, or in an even greater degree, on the duration of the lives of our relatives, near and remote. We have, so to speak, "to run the gauntlet," mercilessly used by our ancestors. We have been proved to inherit the faculty or ability to live a long life or a short one, just as we plainly see we inherit our physical characters from our ancestors. If we take into account the mortality due to accident and other external causes, we find that we inherit the faculty to live a long or a brief life *to the same extent* that we inherit physical and mental characters. So Professor Pearson found. This is what we should expect if we inherit good or bad physique; and the

early striking down of those of weaker stock before the opportunity to perpetuate their kind has entirely ceased, and the survival of those of stronger stock up to or beyond their reproductive period, is, I take it, the phenomenon of Natural Selection in operation among mankind.

Examining this subject still, in another aspect of it, it should be mentioned that a physical character such as the ratio of the head breadth to head length—the cephalic index—has been found to vary sensibly from one district of London to another. In the provinces there are marked differences, due to differentiation into local groups. In Scotland we find distinct differences in the physical characters of both children and adults as we pass from one county or large district to another. Thus we must conclude that, in making a statistical analysis of any eugenic problem, we may frequently be examining a group which is not racially homogeneous, and thus that what may hold for one section with respect to any defect or peculiarity, may not be true of another section of the group. For example, we might find that a certain low standard of town life is associated with high proportions of myopia among children, or of low stature among adults, and be apt to conclude that this low standard is responsible for both these conditions. A further study of physical characters and of other data relevant to the enquiry, might reveal that these conditions were due to the fact that the group consisted of a mixture of races—one race, in particular, being short-statured and relatively more defective in eyesight than the general community. Again, it might be found that a much greater proportion of fair-haired children lived in rural districts and a greater proportion of dark-haired children lived in cities and large towns. What connection can this have with the science of eugenics? This. It may be that certain factors in town life tell against blonde children and, consequently, there may be a greater mortality among them than among the dark-haired. This would mean that dark people had, on an average, better physique to stand the strain of town life than blondes. But another explanation is possible. There may be a migration of people belonging to dark-haired races to towns, thus depressing the proportion of blondes in town populations. This is certainly true, to a large

extent, of the city of Glasgow, although it may not be the sole cause, and therefore in any enquiry as to whether a town environment was unsuitable to blondes, one would require to observe the proportions among the same people who have migrated to the towns. Mortality, fertility and longevity among each of the racial groups would also require to be studied. In general, we see that race plays a fairly important part in many eugenic problems and thus a national survey of its physical characters, as well as of the mental characters of the children, together with a concurrent enquiry bearing on medico-sociological factors, is eminently desirable. The anthropometric observations made should be simple in character. Certain head measurements together with measurements of stature and weight, such as are included in medical inspection, should be made. Hair colour and eye colour should, of course, be noted. The noting of these characters necessitates less labour, and probably should be the first of the series. From experience of foreign and British data, pigmentation has been found to be an important racial factor, and is sometimes connected with pathological defects—indeed its absence is a pathological defect. Its absence more or less is associated with other defects. Its presence, in varying intensities, is associated with certain races and thus, if race and pathological defects are eugenic factors, pigmentation is a eugenic factor. Many improvements have been made in classifying colour since the pioneer work was carried out, and there is little doubt that reliable standards can now be given from which the teacher or other observer would work.

The surname of the child, with such particulars as to the surnames and qualities of the parents and more immediate ancestors as can be ascertained by enquiry at their homes when the sociological observations are being made, should be included in the anthropometric data from schools, and should be submitted to analysis. An analysis of the surnames of the children alone, or taken with other characters, would give the State and the eugenicist much valuable information. We should be able to give aid in answering a question of much importance eugenically, namely, whether boys inherit more from their male ancestors, and girls more from their female ancestors.

We should be able to attack the problem as to whether septs or clans, or specially isolated sections of the community, have greater resemblances among themselves, and thus are differentiated from the general population. Above all, by directing the attention of the child and the parent to the family surname, and by conducting an analysis to reveal its frequency and associated characters, we would undoubtedly interest the parent and assist in cultivating pride of family, and of good stock, among the industrial and lower middle classes—such a just pride as exists among all families of good stock. *Apropos* of this, it appears to me that the clan system, which developed in Scotland with such remarkable results (although it had its objectionable features), is capable of being utilised for the promotion of good stock. We know the intense interest which surrounds a historic name. The pride of surname is great still in many parts of Scotland. In Ireland ancient lineage is traceable in many surnames. It is part of the English character to trace ancestry to Norman times. There is an excellent biological reason for all this. It is nothing less than that Natural Selection has operated in favour of the living representatives of a virile and capable people. Throughout the whole country good stock exists among the industrial and middle classes. It is, I believe, despite the drain of emigration, specially prevalent in the rural population of Scotland. Incidentally, I make the following suggestions towards the scientific development of the clan system and the institution of eugenic septs. First of all I should like to see, not the chief, but all clans and septs, instituting societies—each clan with a society of its own. Secondly, I should like to see local associations, as suggested by Sir Francis Galton (local scientific societies might be appealed to), instituted as Sept Unions—sept groups for collecting all information available, such as family histories, but with a special application and with a special interest to each individual. The key to the whole system should be the surname. For the purpose in view each individual admitted should be a selected individual, either by worth or some other condition imposed by the class to which the individual belongs. I would further suggest that one of the conditions should be the construction, by the applicant, of a family tree reaching back at least to

great-grandparents. If he is able to do this he will probably know a great deal about his family history, and it should be the pride of every worthy citizen to be able to construct such a table, and to be able to refer to it, on momentous occasions, during his lifetime. The habit of attaching more than the father's surname is now getting common, but the individual and other names given to children want attention from the eugenicist. It should be our endeavour, in my opinion, to get all children named in a more scientific manner than is at present the case. A birth eugenic name, given to each child, for identification of its immediate ancestors, would be at once scientific and helpful to the cause of racial improvement, as such pains would be almost certain to be accompanied with other information of value to eugenists.

It was pointed out long ago by De Candolle as well as by Sir Francis Galton, that owing to the different rates of fertility of different families, surnames were continually dying out. Of course, one must remember that surnames represent only a portion of the family inheritance, but, nevertheless, without a differential fertility, one surname has just as good a chance as another of being represented in any population. The results of some Scottish figures where an opportunity existed of comparing the frequency of surnames now and 200 years ago (see B. A. Report, Cambridge, page 707), show an excessive change in the frequencies which cannot be accounted for by migration, and confirm the statement that surnames are continually dying out of the population.

The suggestion I have just made respecting surnames and septs is somewhat of a digression, but one can see that a national eugenic survey would profit by greater attention to family surnames, for, among other things, it means greater knowledge of the families themselves.

I have dwelt much longer than I intended on the reasons why a national eugenic survey of school children should be organised and carried out. To many the elaboration of these reasons may seem unnecessary. It is possible most of us will agree that such a survey is desirable. The questions put by the practical man no doubt would be: "How do you propose it should be carried out?" and "Is this an opportune time for such

an undertaking ? ” I shall do my best to answer these queries. In the first place, medical inspection—in my view, a part of the eugenic survey—is being regularly prosecuted. Secondly, restricted anthropometric surveys have been successfully carried out on the Continent. I would mention especially the pigmentation survey of Germany. This was accomplished in an excellent manner by the teachers, under the direction of the late Prof. Virchow. In Scotland, as has been already mentioned, five-sixths of the total number of children were similarly surveyed, with excellent results. Thirdly and lastly, I draw special attention to the local medico-sociological researches carried out under the direction of the London County Council, the Glasgow, Edinburgh, and Aberdeen School Boards, and other leading Educational authorities. What has been done by these and other public bodies and by eminent private individuals can be done by every educational authority in the Kingdom. As it is a survey of some magnitude, we must consider whether it should be attempted as a voluntary scheme, or whether powers should be sought, so that it could be organised under the direction of a State Department. I leave that, meantime, an open question. A voluntary survey would admittedly be a task of some magnitude, difficulty and financial responsibility, but, with the sympathy of the teachers and provincial and central educational authorities, it could, I think, be carried out. In that case, the cost would have to be met by private means—either the sum would be raised by private donations or subscriptions, or each provincial Educational authority might be willing to contribute the whole or in part, for its own area. Under the recent Act, the collection of data in schools is rendered permissive. The Act expressly states that any educational authority may cause such investigations to be made. With the sympathy of the teacher, the medical officer and the educational authority, the school part could thus be carried out, provided ways and means were got. The outside sociological part presents greater difficulty. If county councils, cities, and boroughs were appealed to, I believe they would not be appealed to in vain.

Considering the survey on lines other than voluntary, means its institution under the wing and direction of a Government

Department. To realise this means parliamentary or Departmental action. My sincere hope is that, either by voluntary or official means, a national eugenic survey will soon be an accomplished fact.

The case, then, for a national eugenic survey is briefly this. It is the completion of the work begun under the title of medical inspection. It is a necessity, because its object is to collect information which would be used to solve, finally and definitely, how best to secure good physique from the moment of birth onwards, for school children, the fathers and mothers of the next generation. Eugenists are in the main convinced that, by providing that quite bad stock should not be perpetuated at all, by safeguarding in every way good stock, and by encouraging the production of larger families among the fitter portion of the population, we shall effect the object all right-thinking persons have in view, namely, an increased fitness physically, mentally, and morally, among the general population. Although eugenists think this the proper method, it has not yet the sanction of public opinion. The survey would go a great way, if not all the way, in converting the leaders and, ultimately, the body of the people to our view.

It is now about forty years since Samuel Butler, in a biting satire, drew attention to the desirability of the reproduction of men and women of good physique. Underlying his conception of the Erewhonians, their customs and their laws, was the principle of eugenics. His exposure of hypocrisy and sham, and his criticism of detrimental customs and laws, secured for him a brief period of popularity and a measure of momentary fame. But Butler deserves and will secure enduring fame, for he saw, with an acuteness of vision, born of genius, the anomalies of Society and many of the present dislocated social conditions and the true cause, namely, bad stock. He suggested, ironically, a very effective method of improving stock, and his description of the physical characters of the people of Erewhon leave us in no doubt that, if the method was somewhat severe, the results were very eminently satisfactory, for the Erewhonians were a physically perfect race. His method was to place on trial, before a jury of his fellow-country men and, if found guilty, to fine,

imprison or sentence to death, according to the enormity of the offence, each person who catches any disease, possesses any deformity, or fails in bodily health in any way, *before he is 70 years of age!* This measure is certainly drastic, even for a Scotsman, whose grade of physique is estimated, according to another satirist, by his mean alcoholic capacity—the number of gallons of whisky he can, on an average, consume in a week! But if we cannot just yet quite adopt this Erewhonian purification, we can, at least, have it at the back of our minds and bequeath it to our posterity, living in a far distant age to come, when Society shall have reached the proper attitude of mind for the proposed change.

Just consider for one moment how fast an Erewhonian population with average fertility and with a restricted but compulsory period of mating of, say, five or six years, would increase. At the end of twenty generations, two couples would be represented by over a million of a population. The age distribution of that population would be quite different from the distribution of any population to-day. Despite the greater longevity of the ideal population, the proportion of children would be much greater than in any real population, because there would be no selective death-rate in childhood, or at any stage throughout life, until old age had begun to show its marks. But what the Erewhonians did in fiction we are doing to-day in reality; we are suspending the operations of Natural Selection, with this difference. We are giving a free pass to the most fertile, whether of good or bad stock. In the words of our chief authority, we are suspending a selective death-rate without, at the same time, promoting a selective birth-rate. We are, I suspect, seeing all this accentuated by the constant emigration of a vigorous if not a *more* vigorous class of men and women, driven by necessity, or attracted by fairer prospects, or both, to other shores, where new and probably more virile stocks of British descent are making unconscious experiments for future eugenic students to unravel.

Must we after all revert to one of Plato's conceptions and imagine ourselves to be like chained prisoners, in a subterranean cavern with our backs to the entrance, seeing only the shadows of inanimate things, borne by invisible living beings, and count-

ing them the only realities? If so, some have detected the shadows as shadows, and have discovered where the voices come from. They have discovered that they belong to unseen actors behind the wall, below the shadow-making objects. We now learn, for instance, that instead of good environment producing good physique, it is good physique which creates the better environment. We are told that the alcoholics have, on an average, good physique, although the converse is not true that men and women of good physique are, on an average, alcoholics. And, finally, we learn it is a mistake to expect good physique generally, in the future, will come from the betterment of the present race, but rather we should confidently expect that the betterment of the future race will spring from fertile men and women who have the great good fortune to possess fine physique at the present hour.

This reversal of our ideas, brought about by a disclosure of new and important facts, must render us cautious in present and future interpretations of vital statistics, and will, I sincerely hope, slowly but surely bring about a peaceful revolution, in which many of the present customs of Society will be profoundly modified, and prepare us for the advent of another phase of Society in the future, more stable, scientifically and thus consciously directed, and thus better able to produce a sound, healthy and capable breed of mankind in this country. It is because, in common with all eugenists, I desire this, that I advocate the institution of a National Eugenic Survey.

