

HEREDITY IN RELATION TO EUGENICS

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TO
MRS. E. H. HARRIMAN
IN RECOGNITION OF THE GENEROUS ASSISTANCE
SHE HAS GIVEN TO RESEARCH IN EUGENICS
THIS BOOK IS
GRATEFULLY DEDICATED

PREFACE

RECENT great advances in our knowledge of heredity have revolutionized the methods of agriculturalists in improving domesticated plants and animals. It was early recognized that this new knowledge would have a far-reaching influence upon certain problems of human society—the problems of the unsocial classes, of immigration, of population, of effectiveness, of health and vigor. Now, great as are the potentialities of the new science of heredity in its application to man it must be confessed that they are not yet realized. A vast amount of investigation into the laws of the inheritance of human traits will be required before it will be possible to give definite instruction as to fit marriage matings. Our social problems still remain problems. For a long time yet our watchword must be *investigation*. The advance that has been made so far is chiefly in getting a better method of study.

In this book I have sought to explain this new method. An application of this method to some specific problems, especially to the transmission of various human traits and susceptibilities to disease, has been attempted. The suggestions made are by no means final but are made to illustrate the general method and give the most probable conclusions. Only with much more accurate data can the laws of inheritance of family peculiarities be definitely determined.

Some general consequences of the new point of view for the American population have been set forth in Chapters IV to VI. Their essential truth will, I trust, be generally

recognized. In any case it will not be amiss to point out the fundamental difference between the modern eugenical and the contrasted or "euthenical" standpoints. As a matter of fact the eugenic teachings that we think of as new are very old. Modern medicine is responsible for the loss of appreciation of the power of heredity. It has had its attention too exclusively focussed on germs and conditions of life. It has neglected the personal element that helps determine the course of every disease. It has begotten a wholly impersonal hygiene whose teachings are false in so far as they are laid down as universally applicable. It has forgotten the fundamental fact that all men are created *bound* by their protoplasmic makeup and *unequal* in their powers and responsibilities.

As indicated, it is the aim of this book to incite to further investigation. Some space is devoted to the eugenics movement—a movement which it is hoped will, in this country, for the present, take mainly the form of investigation. To this movement the Eugenics Record Office (a branch of the work of the American Breeders' Association) is dedicated. The Eugenics Record Office wishes to get in touch with all persons interested in the eugenics movement. It invites every person who is willing to do so to record his heritage and place the record on file at the Record Office. "Drop a postal card" at once to the Eugenics Record Office, Cold Spring Harbor, New York, and ask for the blank schedule they furnish. It is understood that all data deposited in this way will be held as confidential and be used only for scientific purposes. The data received are carefully preserved in a fireproof vault and indexed so as to be available to the student. Specifically, the Record Office seeks pedigrees of families in which one or more of the following traits appear:—short stature, tallness, corpulency, special talents in music, art, literature, mechanics, invention and

mathematics, rheumatism, multiple sclerosis, hereditary ataxy, Ménière's disease, chorea of all forms, eye defects of all forms, otosclerosis, peculiarities of hair, skin and nails (especially red hair), albinism, harelip and cleft palate, peculiarities of the teeth, cancer, Thomsen's disease, hemophilia, exophthalmic goiter, diabetes, alkaptonuria, gout, peculiarities of the hands and feet and of other parts of the skeleton. We do not appeal primarily to physicians for this information but to the thousands of intelligent Americans who love the truth and want to see its interests advanced. At the same time, physicians can aid in the work by inducing persons with bodily or mental peculiarities that run through their families to send to the Record Office for blank schedules on which to record the method of inheritance of the trait in question. Thus every one can share in the eugenics movement.

The Eugenics Record Office will be glad to assist in the establishment of local eugenics societies which shall become centers for the study of local blood-lines and for local instruction. The Office seeks to assist state officials in the study of the classes which are supported and protected by the State, and to assist the States to locate the centers in which their defectives and delinquents are being bred. It is believed that a little money spent in studying the sources of reproduction of persons who are destined to become state wards will prove a highly profitable investment, since it may lead to steps that will diminish such reproduction.

In the preparation of the present volume the author has been aided by many hands. Professor James A. Field, of the University of Chicago, has kindly read the proof and made valuable suggestions. The bibliography and the pedigree charts were largely prepared by Miss Amey B. Eaton, of the Eugenics Record Office. Professor E. B. Wilson has generously granted me the use of Figures 1 to 6 from his

invaluable book, "The Cell in Development and Inheritance." Hundreds of persons have voluntarily contributed the data upon which the conclusions that have been drawn are based. My friend and colleague, Mr. H. H. Laughlin, Superintendent of the Eugenics Record Office, has assisted in many points and has contributed the frontispiece. My wife has, as usual, revised the manuscript and prepared it for the printer. The Trustees of the Carnegie Institution have granted me exceptional opportunities for the prosecution of the work. Last, but by no means least, this work and the collection of data out of which it has grown have been made possible by the financial assistance and by the personal stimulus and advice given by the lady to whom, in insufficient recognition, this book is, with her permission, dedicated. To all those who have so kindly assisted me I return thanks. I trust the book will be useful to humanity, so as to justify them for the pains they have taken to bring it to pass.

C. B. D.

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HEREDITY IN RELATION TO EUGENICS

CHAPTER I

EUGENICS: ITS NATURE, IMPORTANCE AND AIMS

1. WHAT EUGENICS IS

Eugenics is the science of the improvement of the human race by better breeding or, as the late Sir Francis Galton expressed it:—"The science which deals with all influences that improve the inborn qualities of a race." The eugenical standpoint is that of the agriculturalist who, while recognizing the value of culture, believes that permanent advance is to be made only by securing the best "blood." Man is an organism—an animal; and the laws of improvement of corn and of race horses hold true for him also. Unless people accept this simple truth and let it influence marriage selection human progress will cease.

Eugenics has reference to offspring. The success of a marriage from the standpoint of eugenics is measured by the number of disease-resistant, cultivable offspring that come from it. Happiness or unhappiness of the parents, the principal theme of many novels and the proceedings of divorce courts, has little eugenic significance; for eugenics has to do with traits that are in the blood, the protoplasm. The superstition of prenatal influence and the real effects

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of venereal disease, dire as they are, lie outside the pale of eugenics in its strictest sense. But no lover of his race can view with complaisance the ravages of these diseases nor fail to raise his voice in warning against them. The parasite that induces syphilis is not only hard to kill but it frequently works extensive damage to heart, arteries and brain, and may be conveyed from the infected parent to the unborn child. Gonorrhea, like syphilis, is a parasitic disease that is commonly contracted during illicit sexual intercourse. Conveyed by an infected man to his wife it frequently causes her to become sterile. Venereal diseases are disgenic agents of the first magnitude and of growing importance. The danger of acquiring them should be known to all young men. Society might well demand that before a marriage license is issued the man should present a certificate, from a reputable physician, of freedom from them. Fortunately, nature protects most of her best blood from these diseases; for the acts that lead to them are repugnant to strictly normal persons; and the sober-minded young women who have had a fair opportunity to make a selection of a consort are not attracted by the kind of men who are most prone to sex-immorality.

2. THE NEED OF EUGENICS

The human babies born each year constitute the world's most valuable crop. Taking the population of the globe to be one and one-half billion, probably about 50 million children are born each year. In the continental United States with over 90 million souls probably $2\frac{1}{2}$ million children are annually born. When we think of the influence of a single man in this country, of a Harriman, of an Edison, of a William James, the potentiality of these $2\frac{1}{2}$ million annually can be dimly conceived as beyond computation. But for better or worse this potentiality is far from being

realized. Nearly half a million of these infants die before they attain the age of one year, and one-third of all are dead before they reach their 20th year—before they have had much chance to affect the world one way or another. However, were only one and a quarter million of the children born each year in the United States destined to play an important part for the nation and humanity we could look with equanimity on the result. But alas! only a small part of this army will be fully effective in rendering productive our three million square miles of territory, in otherwise utilizing the unparalleled natural resources of the country, and in forming a united, altruistic, God-serving, law-abiding, effective and productive nation, leading the remaining 93 per cent of the globe's population to higher ideals. On the contrary, of the 1200 thousand who reach full maturity each year 40 thousand will be ineffective through temporary sickness, 4 to 5 thousand will be segregated in the care of institutions, unknown thousands will be kept in poverty through mental deficiency, other thousands will be the cause of social disorder and still other thousands will be required to tend and control the weak and unruly. We may estimate at not far from 100 thousand, or 8 per cent, the number of the non-productive or only slightly productive, and probably this proportion would hold for the 600 thousand males considered by themselves. The great mass of the yearly increment, say 550 thousand males, constitute a body of solid, intelligent workers of one sort and another, engaged in occupations that require, in the different cases, various degrees of intelligence but are none the less valuable in the progress of humanity. Of course, in these gainful occupations the men are assisted by a large number of their sisters, but four-fifths of the women are still engaged in the no less useful work of home-making. The ineffectiveness of 6 to 8 per cent of the males and the

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probable slow tendency of this proportion to increase is deserving of serious attention.

It is a reproach to our intelligence that we as a people, proud in other respects of our control of nature, should have to support about half a million insane, feeble-minded, epileptic, blind and deaf, 80,000 prisoners and 100,000 paupers at a cost of over 100 million dollars per year. A new plague that rendered four per cent of our population, chiefly at the most productive age, not merely incompetent but a burden costing 100 million dollars yearly to support, would instantly attract universal attention. But we have become so used to crime, disease and degeneracy that we take them as necessary evils. That they were so in the world's ignorance is granted; that they must remain so is denied.

3. THE GENERAL PROCEDURE IN APPLIED EUGENICS

The general program of the eugenicist is clear—it is to improve the race by inducing young people to make a more reasonable selection of marriage mates; to fall in love intelligently. It also includes the control by the state of the propagation of the mentally incompetent. It does not imply destruction of the unfit either before or after birth. It certainly has only disgust for the free love propaganda that some ill-balanced persons have sought to attach to the name. Rather it trusts to that good sense with which the majority of people are possessed and believes that in the life of such there comes a time when they realize that they are drifting toward marriage and stop to consider if the contemplated union will result in healthful, mentally well-endowed offspring. At present there are few facts so generally known that they will help such persons in their inquiry. It is the province of the new science of eugenics to study the laws of inheritance of human traits and, as

these laws are ascertained, to make them known. There is no doubt that when such laws are clearly formulated many certainly unfit matings will be avoided and other fit matings that have been shunned through false scruples will be happily contracted.

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CHAPTER II

THE METHOD OF EUGENICS

1. UNIT CHARACTERS AND THEIR COMBINATION

When we look among our acquaintances we are struck by their diversity in physical, mental, and moral traits. Some of them have black hair, others brown, yellow, flaxen, or red. The eyes may be either blue, green, or brown; the hair straight or curly; noses long, short, narrow, broad, straight, aquiline, or pug. They may be liable to colds or resistant; with weak digestion or strong. The hearing may be quick or dull, sight keen or poor, mathematical ability great or small. The disposition may be cheerful or melancholic; they may be selfish or altruistic, conscientious or liable to shirk. It is just the fact of diversity of characteristics of people that gives the basis for the belief in the practicability of improving the qualities of the "human harvest." For these characteristics are inheritable, they are independent of each other, and they may be combined in any desirable mosaic.

The method of inheritance of these characteristics is not always so simple as might be anticipated. Extensive studies of heredity have, of late years, led to a more precise knowledge of the facts. The element of inheritance is not the individual as a whole nor even, in many cases, the traits as they are commonly recognized but, on the contrary, certain unit characters. What are, indeed, units in inheritance and what are complexes it is not always easy