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American Population.

I. THE SCOPE OF THE COMMITTEE'S WORK

BY

HARRY H. LAUGHLIN

Secretary of the Committee

COLD SPRING HARBOR
LONG ISLAND, NEW YORK
February, 1914

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**Committee to Study and to Report on the Best
Practical Means of Cutting Off the
Defective Germ-Plasm in the
American Population.**

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EVERETT FLOOD **H. W. MITCHELL**
H. H. LAUGHLIN, Secretary

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INTRODUCTION.

The investigation reported in this series of studies was initiated at the second meeting of the Research Committees of the Eugenics Section of the American Breeders Association at Palmer, Mass., May 2 and 3, 1911, Dr. W. N. Bullard presiding. At this meeting the following resolution was unanimously adopted: *Resolved*, That the Chair appoint a committee commissioned to study and report on the best practical means for cutting off the defective germ-plasm in the American population. Whereupon Dr. Bullard, after consultation, named the following members: Dr. W. H. Mitchell, Hathorne, Mass., Chairman; Bleecker Van Wagenen, Alstead Center, N. H.; Dr. Everett Flood, Palmer, Mass.; Dr. W. H. Carmalt, New Haven, Conn.; H. H. Laughlin, Cold Spring Harbor, Long Island. Later in the day the Chairman, Dr. Mitchell, designated Mr. Laughlin Secretary.

On July 15, 1911, the committee met with Mr. Van Wagenen at the City Club, 55 West 44th Street, New York City. Dr. Mitchell, on account of other engaging duties, resigned the chairmanship of the committee; whereupon, on motion of Dr. Carmalt, Mr. Van Wagenen was unanimously chosen Chairman. The committee met from time to time under the leadership of Mr. Van Wagenen, and outlined the investigation. It was decided to make the study as comprehensive and as thorough as possible, and to this end the aid of an expert advisory committee was deemed essential. The following named experts were duly invited and accepted membership on the committee as indicated:

Medicine, L. F. Barker; physiology, W. B. Cannon; surgery, Alexis Carrel; biology, Herbert J. Webber; thremmatology, Raymond Pearl; anthropology, Alex. F. Chamberlain; psychiatry, Stewart Paton; psychology, H. H. Goddard; woman's viewpoint, Mrs. Caroline B. Alexander; criminology, Warren W. Foster; sociology, Franklin H. Giddings; economics, James A. Field; statistics, O. P. Austin; immigration, R. DeC. Ward; law, James M. Beck and Louis Marshall; history, James J. Walsh; public affairs, Irving Fisher; international cooperation, E. E. Southard.

The work of gathering and analyzing data began in the summer of 1911, and the Chairman, Mr. Van Wagenen, presented before the First International Eugenics Congress, which met in London, July 24 to 30, 1912, a preliminary report of the investigation.

It is the purpose of the committee to investigate all phases of the problem of cutting off the supply of defectives, and to publish from time to time data which will, we trust, aid the student of social affairs in weighing any particular phase of the problem that may present itself. The committee will therefore study the facts in reference to the numbers of and the rate and manner of increase of the socially inadequate. It will strive to analyze the factors of heredity and environment in the production of the social unfitness observed. It will report first-hand facts concerning the drag that these classes entail upon the general welfare, and will review the first-hand studies in human heredity that have been made by careful study of the problem. And finally the committee will point out what appears as a result of study to be "the best practical means," so far as the innate traits are a factor, of purging the blood of the American people of the handicapping and deteriorating influences of these anti-social classes.

The first series of studies will be devoted to a study of sterilization as a eugenical agency.

THE FIELD OF STUDY

The specific problems, then, now before this committee may be classified as follows:

1. *Medicine:* Standards and methods for determining the type of degenerates proposed for eugenical segregation or sterilization. The relation of sterilization to the spread of venereal diseases. Sterilization as a therapeutic agent. The classification and determination of human defects.

2. *Physiology:* Comparative effects of the various forms of sterilization on normal and the different types of abnormal individuals, both male and female, at different ages, in respect to nutrition, growth, temperament, primary sex organs, secondary sexual characteristics, voice and physiological reactions.

3. *Surgery:* Technical and popular description of the various methods employed in sterilizing both males and females. Seriousness and difficulty of the operations. Preparation and convalescence. Possibility of restoring the procreatory function in sterilized persons.

4. *Biology:* The origin of defective strains within the human population. Processes of contaminating normal strains with defective traits. The inheritance of defective traits and the manner of their combination into various legal types of the socially unfit. The com-

parative influence of modern and ancient social conditions on the selective elimination of defectives. The probable outcome of the present tendencies if unchecked.

5. *Thremmatology*: Efficacy of sterilization of hereditary degenerates to raise the average of the race. Comparison between the essential principles of eugenics and of plant and animal breeding, application of these principles in consonance with the highest social and moral ideals. Criteria for the identification of persons possessing defective germ-plasms. The consideration of persons of mixed worth and defect. Relative thremmatological effect of sterilizing all persons with defective germ-plasms, and of sterilizing only degenerates. Measure of the relative thremmatological value of sterilization on different scales and at different rates.

6. *Anthropology*: History of sterilization and asexualization among ancient and modern nations and tribes. Motives, voluntary factors, etc. Effect upon tribal and national growth.

7. *Psychiatry*: Classification of the various types of the insane with especial reference to the hereditary factor. Standards and tests for diagnosis.

8. *Psychology*: Standards and tests for determining the types of mental degenerates and defectives proposed for sterilization. Effects of the various forms of sterilization on both males and females in mental processes, industry, habits of life, and sex instincts.

9. *Morals and Ethics*: Eugenics and democracy. The attitude of the various churches toward the proposal to sterilize persons known to possess defective germ-plasms. The ethical, moral, and ontological aspects of sterilization. Eugenic limitations of marriages by the ministry.

10. *Woman's Viewpoint*: Relative responsibilities and burdens of men and women within the socially unfit classes in rearing children. Sterilization as a punitive, humane, and eugenic measure; and as an agency for social prophylaxis. Woman's view of the rights of parentage of individuals liable to beget socially unfit offspring or who are unable to provide the environment necessary to the normal development of offspring. The attitude of society toward such individuals.

11. *Criminology*: Role of heredity in crime. Standards and tests for determining the criminal types proposed to sterilize. What constitutes a confirmed criminal? Consideration of the justice of the operation in the case of redeemable delinquents.

12. *Sociology*: Relative rights and duties of the race and the individual whom society proposes to sterilize. Part the sterilized individual takes in the social fabric and the attitude of society toward such individuals. Estimate of the relative proportion of the socially unfit committed to institutional care to those living in the population at large. Method of reaching defective and potential parents of defectives not in institutions. Relation of sterilized individuals to the social evil, and the spread of venereal diseases. Estimate of the present social handicap of defectives on the American and other peoples. Relative roles of heredity and environment in producing defectives. Relative rights of control of society and the individual over germ-plasm. Presentation of special problems connected with the elimination of each of the several following classes of the socially unfit: (a) the feeble-minded class, (b) the pauper class, (c) the inebriate class, (d) the criminalistic class, (e) the epileptic class, (f) the insane class, (g) the asthenic or physically weak class, (h) those predisposed to specific diseases or the diathetic class, (i) the physically deformed, (j) those with defective sense organs, or the cacæsthetic class.

13. *Political Economy*: Measure of the economic handicap of the presence of defectives. Their relation to national, industrial, military, and intellectual efficiency and to national perpetuity. Relation of sterilization on different scales to future population, and to the relative extent of the defective classes. Relation of sterilization to immigration.

14. *Statistics*: Data relative to the past, present and probable future cost of maintaining defectives; their number and classification; their rate of increase—absolutely, and compared to the rate of increase of the better strains. The age of persons committed to State custody. Rate of commitment. Length of commitment.

15. *Law*: Examination of existing sterilization laws with the view to determining whether the constitutional personal guarantees are sufficiently safeguarded. Do the committees and commissions authorized to enforce the several sterilization laws constitute special courts? Can the decisions of such commissions and committees reverse or modify court decrees? Is sterilization in any of the laws held a punitive remedy? If so, can it be considered as a second punishment for one offense, or as cruel or unusual punishment? Is the State taking any retaliatory measures toward a certain class of offenders in authorizing the operation? Can the sterilization of degenerates, or especially of criminals, be legitimately effected through the exercise of police functions? Flexibility of the common law in adapting itself to new

social problems. Legal aspect of sterilization in states practicing it without the express authorization of the law. Do existing laws permit any other surgical operation than sterilization? If so, legal bearing? Do existing laws authorize sterilization as a punitive, a reformatory, a therapeutic, or a eugenic measure? Sterilization and inheritance of property. Framing a model law permitting the sterilization of persons known to have defective germ-plasms, establishing criterion therefor, and providing for effective execution. Digest of litigation bearing upon or growing out of the operation. Examination of those laws on commitment to state institutions.

16. *History*: Account of the origin, development and relative numbers of the socially unfit within the great nations of history. Attitude of society toward this class. War and defectives. Elimination of the best blood in relation to national decline. Genius and national greatness.

17. *Public Affairs*: Sterilization in relation to the general welfare. The conservation policy and sterilization. Political expediency of the proposed remedy. Weighing and balancing of the facts and arguments presented by the consideration of the several aspects of the problems with the view to practical application.

18. *International Co-operation*: A review of the studies looking toward the possible application of the sterilization of defectives in foreign countries, together with records of any such operations from eugenical motives; foreign laws, customs and attitudes in reference to eugenical sterilization. The extent and nature of the problem of the socially inadequate in foreign countries.

To complete this series of studies is a huge task, and the committee will be satisfied if it can present under each of the given headings a few of the many pertinent facts for consideration by the public.

From the beginning of these studies the committee has, at frequent intervals, had the advantage of consultation with Dr. Charles B. Davenport, the resident director of the Eugenics Record Office, and to him for his many valuable suggestions the committee is greatly indebted.

HARRY H. LAUGHLIN, *Secretary*,
Cold Spring Harbor, Long Island.

December 1, 1913.

CHAPTER I.

THE PROBLEM.

Human progress demands sincere and purposeful social endeavor in all fields promising social or racial betterment. As society becomes more complex and scientific discovery moves apace, the field of profitable social endeavor widens rapidly; but it is still clear that no one agency alone can effect a regeneration of humanity. In order to move forward, humanity and civilization will always require the best efforts of education, religion, philanthropy, agriculture, commerce, industry, social justice, law and order, medicine, technology, and pure science; no one of these can carry the whole burden of progress, although the decay of any one of them would cause a general deterioration to set in. Organization in society exists for the purpose of correlating and directing along profitable lines all of these agencies. Eugenics, which Davenport defines as "the improvement of the human race by better breeding," is one of these agencies of social betterment, which in its practical application would greatly promote human welfare, but which if neglected would cause racial, and consequently social, degeneration. Eugenics, then, is the warp in the fabric of national efficiency and perpetuity. As an art it is as old as mankind; as a science it is just now taking definite form. Whenever the principles governing an art are definitely determined and made to guide humanity, progress in the particular field so affected is rapid.

Modern family history studies have amply demonstrated that heredity plays an important part in social adequacy; and the studies of this committee are tentatively based upon this fact. Since this is true, it then behooves society, in the interests of social and racial progress, to devise means for promoting fit and fertile matings among the better classes, and to prevent the reproduction of defectives.

Since heredity is the fundamental factor of racial fortune, and is therefore the primary agency in the application of eugenical principles, it is thought proper in these studies to present a brief outline of the basic phenomena of natural inheritance.

The accompanying diagram is presented with this in view:

SIMPLE DIAGRAMATIC EXPLANATION OF THE PHENOMENA OF HEREDITY.

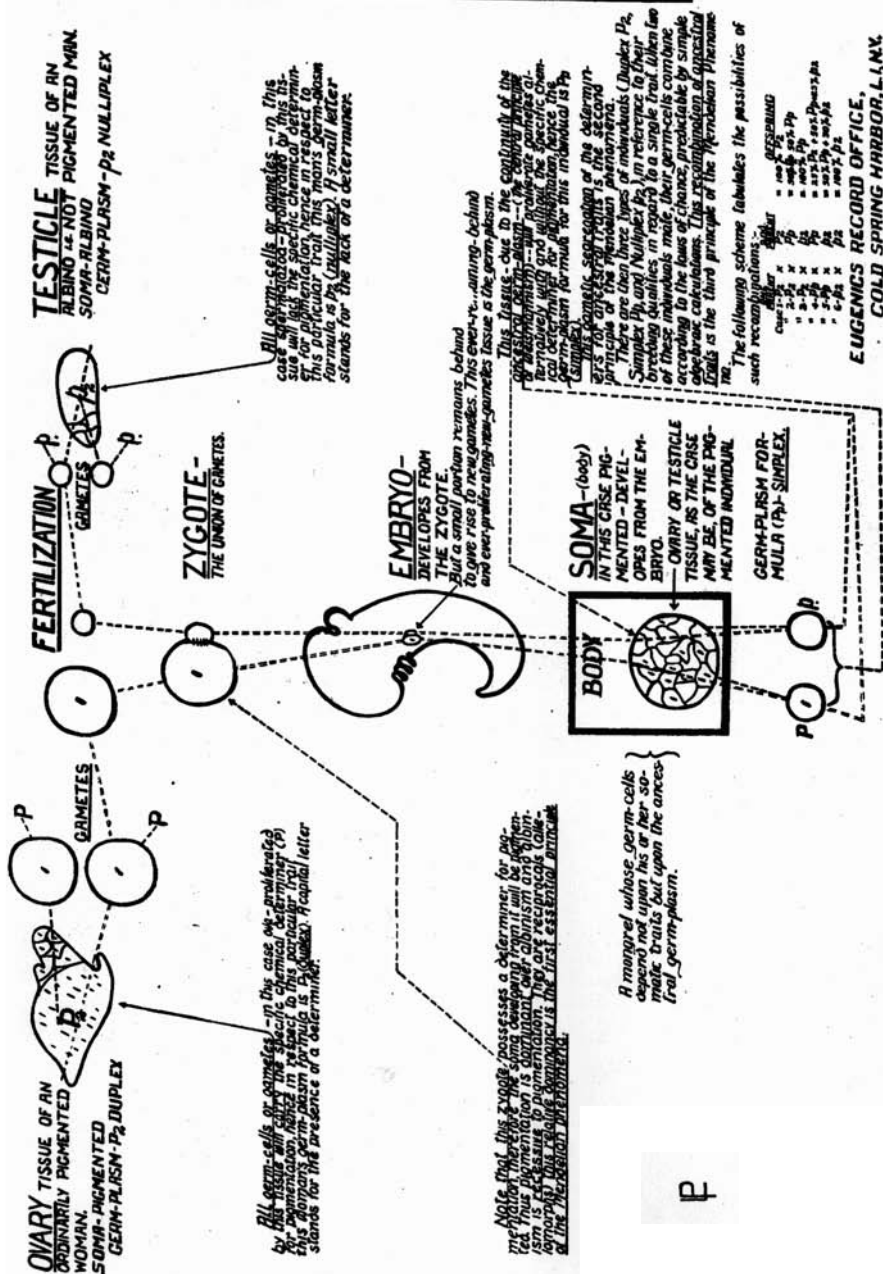


FIG. NO. 1

From a careful perusal of this diagram one learns that in so far as the bodily aspect and the method of inheritance of a trait are concerned there are two kinds of traits, namely, (1) dominant traits, and (2) recessive traits. The following pedigrees illustrate how each of these types is inherited:

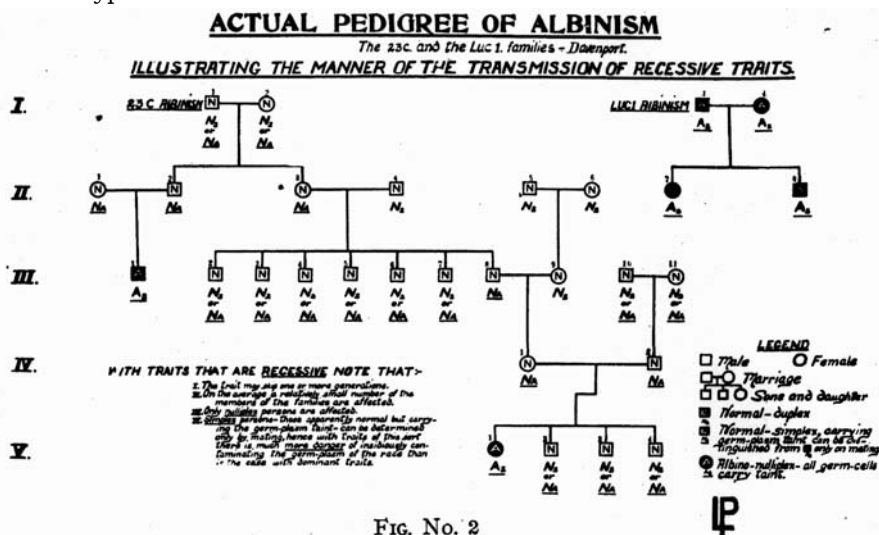


FIG. No. 2

ACTUAL PEDIGREE OF CATARACT.
(THE T. FAMILY LONDON MEDICAL OFFICE-EDUCATION)

ILLUSTRATING THE MANNER OF THE TRANSMISSION OF DOMINANT TRAITS
LAMELLAR CATARACT (PRE-SENILE)

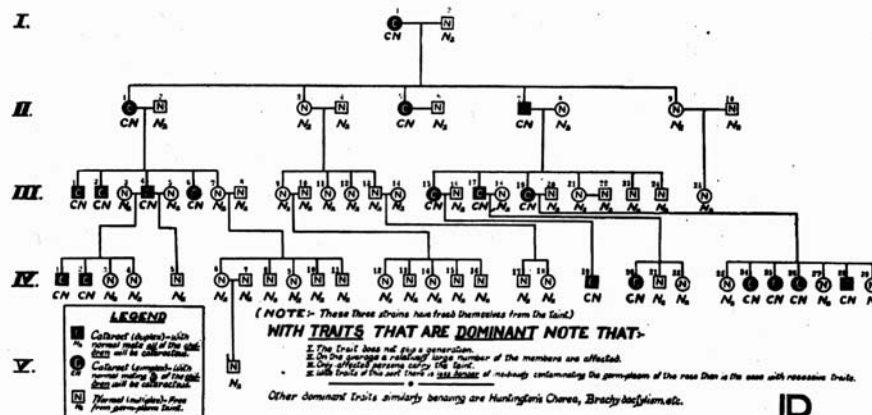


FIG. No. 3

There are many thousand human traits; in the Trait Book (Bulletin No. 6, Eugenics Record Office) Dr. C. B. Davenport lists 2,500 human characteristics—mental and physical; normal and pathological; defective and sterling. But it must not be assumed that these characteristics are unit traits in the Mendelian sense; doubtless most of them are hereditary complexes which resolve into their elements, permitting new conditions in hereditary transmission. A given individual is a fortuitous mosaic of the unit traits of his ancestors. The foregoing diagram and charts show how these traits are segregated, sorted, and recombined. The location of independent units of heredity and the determination of the manner of their inheritance constitute one of the most important branches of eugenical study. Eugenics is a long-time investment, and will appeal only to far-sighted patriots, but, due to the infinite possibilities of recombination, it should produce royal returns in both positive and negative directions.

The studies of this committee are limited to the negative side of the problem, namely, the uprooting of inborn defectiveness, rather than to the positive or constructive agencies of mate-selection and fecundity, among the more talented classes. Its task therefore is vastly less difficult than that which confronts the student of the constructive agencies, for, if a person possesses hereditary traits which render that particular individual unable to cope with his social environment, such person's line of descent should be cut off—a relatively simple process. But for the determination and consummation of wise matings among the upper levels in a highly organized society, the highest degree of scientific knowledge and of social endeavor, in addition to a much longer period of time, are required.

THE SOCIALLY INADEQUATE IN THE AMERICAN POPULATION

The accompanying table, which the committee has compiled from the census reports, shows the extent and growth of institution population in the United States. Fig. No. 4.

In this table the epileptics are included with the other classes; specialized institutions for this type of defectives are for the most part of recent origin. Dr. David F. Weeks (Nov. 3, 1913) reported for the State of New Jersey 443 epileptics at the Skillman Village, 426 in other institutions, 62 in schools, 880 others at large—a total of 1,811 who are registered at the State Village for Epileptics. He estimates that approximately 7 per cent. of the institution population of the United States are epileptics.

INMATES OF INSTITUTIONS IN THE UNITED STATES.

Institutions for	ELEVENTH CENSUS-1890			TWELFTH CENSUS-1900			THIRTEENTH CENSUS-1910			INCREASE (+) DECREASE (-)			INCREASE (+) DECREASE (-)		
	No. of Inmates	Inmates per 100,000 Population	No. of Institutions	No. of Inmates	Inmates per 100,000 Population	No. of Institutions	No. of Inmates	Inmates per 100,000 Population	No. of Institutions	No. of Inmates	Inmates per 100,000 Population	No. of Institutions	No. of Inmates	Inmates per 100,000 Population	No. of Institutions
Blind	88	76.52	12.2	115	13.53	18	175	13.39	168	+87	+7.01	+5.8	+10	+286	-12
Deaf	24	5.25	8.4	42	14.34	16.8	62	20.73	22.5	+18	+9.03	+10.4	+20	+6.38	+37
Feeble-Minded	162	74.08	112.2	328	150.15	112.2	367	187.79	204.2	+166	+76.12	+68	+39	+376.40	+18.0
Inane	2,602	84.32	131.5	1,337	87.72	100.6	2,378	111.69	121.4	-126.5	-5.57	-30.4	+164	+83.83	+208
Criminal	56	14.84	23.7	93	23.03	22.3	90	23.00	27.2	+35	+8.18	+4.6	+6	+19.66	-1.1
Delinquents	2,373	73.04	116.6	2,476	81.76	101.4	2,472	84.98	91.5	+103	+8.71	-15.8	-64	+24.34	-99
Paupers	1,016	11.91	17.8	4,092	205.65	354.6	3,290	306.97	43.1	+2176	+156.74	+174.8	+1198	+127.82	+76.5
Elementary	7,223	94.06	590.4	8,483	634.77	807.9	1,333	84.24	91.47	+126.0	+24.5, 81.3	+217.5	+2830	+206,34.7	+104.8
Total															

(a) The special enumeration of the 133 Census was made in 1901.
 (b) The 133 Census was made in 1901.
 (c) The 133 Census was made in 1901.
 (d) The 133 Census was made in 1901.
 (e) The 133 Census was made in 1901.
 (f) The 133 Census was made in 1901.
 (g) The 133 Census was made in 1901.
 (h) The 133 Census was made in 1901.
 (i) The 133 Census was made in 1901.
 (j) The 133 Census was made in 1901.
 (k) The 133 Census was made in 1901.
 (l) The 133 Census was made in 1901.
 (m) The 133 Census was made in 1901.
 (n) The 133 Census was made in 1901.
 (o) The 133 Census was made in 1901.
 (p) The 133 Census was made in 1901.
 (q) The 133 Census was made in 1901.
 (r) The 133 Census was made in 1901.
 (s) The 133 Census was made in 1901.
 (t) The 133 Census was made in 1901.
 (u) The 133 Census was made in 1901.
 (v) The 133 Census was made in 1901.
 (w) The 133 Census was made in 1901.
 (x) The 133 Census was made in 1901.
 (y) The 133 Census was made in 1901.
 (z) The 133 Census was made in 1901.

EUGENIC RECORD OFFICE.
 COLD SPRING HARBOR,
 L.I.N.Y.

It is hoped that in future censuses data will be secured for measuring the movement of the anti-social varieties of our population. In applying any program for reducing the supply of defectives it is essential that such data be constantly at hand, else how can the efficacy of the agencies applied be judged? It should be possible, at regular intervals, to construct tables similar to the above for each of the classes and sub-classes described in Chapter II of this study.

Besides these individuals in institutions at one time constituting .914 per cent. of our total population, there are several times this number of persons now living who have never been committed to the State's custody, for the population of institutions is constantly shifting. Besides these there are those of equally meagre natural endowments and equally anti-social in conduct who, due to the caprice of fortune, have never been taken in custody by the State.

Just above this class there is a great aggregation of the individuals on the border-line between usefulness and social unfitness, who are so interwoven in kinship with the still more socially inadequate families that they are wholly unfitted for parenthood, because they cannot produce offspring with even mediocre natural endowments. If they mate with a higher level, they contaminate it; if they mate with the still lower levels, they bolster them up a little only to aid them to continue their own unworthy kind. They constitute a breeding stock of social unfitness.

For the purposes of eugenical study and in working out a policy of elimination, it seems fair to estimate the anti-social varieties of the American people at 10 per cent. of the total population; but even this is arbitrary. No matter in what stage of racial progress a people may be, it will always be desirable in the interests of still further advancement to cut off the lowest levels, and to encourage high fecundity among the more gifted.

According to the last census (1910) .914 per cent. of the total population, or 841,244 persons, were inmates of institutions for the anti-social and the unfortunate classes in the United States. The institution population is constantly shifting, and the inmates and patients, as a rule, remain under custodial care but a few years. Of the total number of living persons, then, a much larger percentage have been legally committed to the State's custody after having been duly declared inadequate in one or another phase of the normally expected social reactions. Besides these persons who have been committed to institutions, there are many others of equally unworthy personality

and hereditary qualities who have, through the caprice of circumstance, never been committed to institutions. In addition to these unfit persons there are many parents who, in many cases, may themselves be normal, but who produce defective offspring. This great mass of humanity is not only a social menace to the present generation, but it harbors the potential parenthood of the social misfits of our future generations. It therefore largely constitutes the socially inadequate varieties of the American population. Insofar as the defective traits of the members of these varieties are inborn, they are to be cut off only by cutting off the inheritance lines of the strains that produce them. This is the natural outcome of an awakened social conscience; it is in keeping not only with humanitarianism, but with law and order, and national efficiency. Under an older and harsher order of civilization these lower classes were cut down by disease, famine and petty strife, while the stronger survived, albeit when petty strife took on the aspects of serious warfare then, too, the upper levels suffered most severely; under the present social order there is a bolstering up of the lower and more helpless levels so that their fecundity is evidently operating against these older inhuman, but race-purifying, agencies. It now behooves society in consonance with both humanitarianism and race efficiency to provide more human means for cutting off defectives. Society must look upon germ-plasm as belonging to society and not solely to the individual who carries it. Humanitarianism demands that every individual born be given every opportunity for decent and effective life that our civilization can offer. Racial instinct demands that defectives shall not continue their unworthy traits to menace society. There appears to be no incompatibility between the two ideals and demands.

CHAPTER II.

CLASSIFICATION OF THE SOCIALLY UNFIT FROM DEFECTIVE INHERITANCE: THE CACOGENIC VARIETIES OF THE HUMAN RACE.

The basis for measuring social inadequacy is purely functional, but, in considering the removal of such inadequacy, the causes of the lack of proper functioning must be studied, and hence, for such purposes, the logical basis of classification is etiological. And, if the eugenical rather than the environmental side of the problem is to be considered, then, quite properly, the practical classification scheme must be primarily a biological one based upon hereditary qualities.

For a long time students of human society have practically agreed that, along with the circumstances of environment, the anti-social individuals of the human race originate to some degree from innate characteristics; that there are families and strains of low social value or of positive social menace.

Individual misfits in the social fabric are sometimes classified as "the Defective, the Dependent, and the Delinquent." Sometimes this classification of "the three D's" is recast and increased to the five D's by adding the "Deficient" and the "Degenerate" classes. In this classification: 1, a tramp or a pauper would be called a *Dependent*; 2, an idiot or an imbecile would be called a *Deficient*; 3, the manic depressive or the senile dement would be called a *Defective*; 4, the thief or the truant would be called a *Delinquent*; and, 5, a sadist or a moral imbecile would be called a *Degenerate*.

This classification is, however, inadequate from the eugenical point of view, for the eugenical classification of individuals is based upon innate traits and hereditary potentialities. Whether wholly of defective inheritance or suffering from an insurmountable hereditary handicap, the members of the following groups are, in so far as their traits are hereditary, cacogenic, and the following classification is, therefore, presented as being constructed on a eugenical basis: 1, the feeble-minded class; 2, the pauper class; 3, the inebriate class; 4, the criminalistic class; 5, the epileptic class; 6, the insane class; 7, the constitutionally weak, or the asthenic class; 8, those predisposed to specific diseases, or the diathetic class; 9, the physically deformed class; 10, those with defective sense organs, as the blind and the deaf, or the cacæsthetic class.

This classification of the socially inadequate is obviously partly legal and partly medical, but if is in most part biological, although a purely biological classification would be extremely complex, since it must be based upon unit traits of defective inheritance and their combinations into personalities of the various legal, medical and social types. For an exact scheme of classification no simple basis has yet been found. Such a scheme would involve as many classes as there are anti-social individuals, for no two individuals, even though they may belong to the same general class, will have exactly the same combination of traits. It is sufficient for present purposes to find a scheme providing for the grouping of related types on the basis of those hereditary qualities which appear to dominate their respective personalities. In such a scheme the general lines of demarcation are clearly

enough drawn, but the specific boundaries must be arbitrarily and tentatively indicated.

In the classification of the cacogenic varieties of the human race just rendered many of the classes overlap and oftentimes a given individual may belong to two or more classes. Thus, for instance, factors of feeble-mindedness doubtless run through some of the other groups, and insanity and criminality often overlap and so on. The problem of eugenics would be infinitely simpler if segregable traits rather than individuals could be made the immediate rather than the ultimate basis of selection. But the individual with his or her composite of good and bad qualities must be the immediate basis for eugenical classification, since he or she is the immediate basis for selection for parenthood.

This classification on the basis of individuals is further justified by the fact that, in the case of defectives, one type of defect usually stands out prominently above the rest and the individual, although he may possess a complex of defects, is thus called blind or insane or criminalistic, according to his most prominent characteristic, although he may possess innately any or all of these characteristics, any one of which makes him cacogenic. Hence, because members of the above enumerated classes possess in common a number of traits incompatible with the best social adjustment, this classification appears to fit well into both the social and the biological scheme and may, therefore, well be used as the practical working basis for the profitable study of the best practical means for cutting off the supply of human defectives.

1. THE FEEBLE-MINDED CLASS

The greatest of all eugenical problems in reference to cutting off the lower levels of human society consists in devising a practicable means for eliminating hereditary feeble-mindedness. From a functional point of view, there are all grades and qualities of this defect from the lowest idiot with the mentality not greater than that of the normal two-year-old child to the imbecile with the mentality not greater than that of a twelve-year-old child and the "backward" child or adult. The chronological age of such individuals is always somewhat and may be greatly in excess of their mental years.

From a social point of view this classification is perhaps sufficient. Tredgold in his book on mental deficiency defines the defectives of these three groups in accordance with the basis recommended by the Royal College of Physicians:

1. Idiocy (Low Grade Amentia). The idiot is defined as "a person so deeply defective in mind from birth or from early age that he is unable to guard himself against common physical dangers."

2. Imbecility (Medium Grade Amentia). The imbecile is defined as "one who, by reason of mental defect existing from birth, or from an early age, is incapable of earning his own living, but is capable of guarding himself against common physical dangers."

3. Feeble-mindedness (High Grade Amentia). This is the mildest degree of mental defect, and the feeble-minded person is "one who is capable of earning a living under favorable circumstances, but is incapable, from mental defect existing from birth, or from an early age, (a) of competing on equal terms with his normal fellows; or (b) of managing himself and his affairs with ordinary prudence."

Tredgold suggests that, in addition to this classification, it might be well to define the moral imbecile as "a person who displays from an early age, and in spite of careful upbringing, strong vicious or criminal propensities, on which punishment has little or no deterrent effect." In its more restricted sense the term "degenerate" seems to mean practically the same as the expression "moral imbecile."

It is the moron or high-grade feeble-minded class of individuals that constitute the greatest cacogenic menace, for these individuals, with little or no protection by a kindly social order, are able to, and do, reproduce their unworthy kind. The still lower grades possess such inferior and ill co-ordinated natural qualities that they require great bolstering up in order to reproduce at all. Under the selfishly severe stress of a primitive order of social affairs, natural selection would readily cut off these lowest classes.

In classifying individuals on the functional basis, the general or average end result in their functioning must be considered, but there is also a qualitative difference. Two individuals may grade, according to Binet test, as mentally, say, five years of age. Whereas one may possess a remarkable memory, but be totally unable to calculate or to be educated in manual skill; the second may be manually skillful and at the same time possess a very poor memory, and so forth throughout all the possible combinations of normal traits and defects. This peculiar combination of good and bad qualities is further exemplified in the case of idiot savants. Tredgold describes the Genius of Earlswood Asylum: "A patient whose skill in drawing, invention and mechanical dexterity is certainly unequalled by any inmate in any similar institution in existence." In general this individual who, at the time of Tredgold's book (1908) was 73 years old, functioned as feeble-minded, but, in certain lines of manual skill, he must be ranked as a genius.

But it is necessary for the study of heredity to classify individuals who function as feeble-minded, according to their hereditary traits. The following classification on the basis of clinical variety and hereditary etiology seems to be eugenically logical. This series is arranged approximately in descending order of hereditary causal factors and in ascending order of exogenous causal factors.

Feeble-mindedness

1. Moronic. (Simple functional.)
2. Microcephalic.
3. Epileptic.
4. Amaurotic-idiotic.
5. Cretinic.
6. Mongolic.
7. Anæsthetic.
8. Toxic. (Resulting from disease.)
9. Traumatic. (Resulting from injury.)

2. THE PAUPER CLASS

Individuals belonging to this class fall quite naturally into the following three groups:

- 1, Tramps; 2, Beggars; 3, Ne'er-do-wells.

Many of these individuals belong properly to the feeble-minded class. Oftentimes their special defect or deficiency takes the form of shiftlessness or laziness. Adults of normal traits, who have been socially adequate, but have, through accident, and children who have, through an absolute lack of training and opportunity, become defective and dependent upon charity are not, for the purposes of this study, to be included in the pauper class. It is only with the individual of a hereditary, degenerate make-up which manifests itself in an inability to get on, or lack of ambition, or laziness which drives him or her beyond the bounds of self-maintained usefulness in an organized society that this study is concerned. These individuals are so strikingly anti-social that society is justified, if the general uselessness can be shown to be hereditary, in cutting off the descent line of this whole group of individuals, even if their specific traits and defects cannot be catalogued.

3. THE INEBRIATE CLASS

With this class as with the paupers, mental deficiency appears to be the endogenous cause. In this particular group the deficiency appears to be of a moral nature, preventing the individual from exercising his moral purpose or inhibitions. Under a purely functional classification, many of the feeble-minded, the criminals, the paupers and the inebriates would be called simply Degenerates, but, as just pointed out, the peculiar type of degeneracy that appears in the inebriate seems to be quite different from other sorts of degeneracy herein described. Individuals belonging to this class present the following special varieties: 1, Dipsomania; 2, Chronic Alcoholism; 3, Pharmacomania.

Alcoholism has a peculiar eugenic signification in that it appears to be inextricably tangled up with mental and physical degeneration of all kinds. From a biological point of view, it is difficult to obtain a clear-cut classification of inebriates.

Havelock Ellis in his book, "The Criminal," says:

The relation of alcoholism to criminality is by no means so simple as is sometimes thought; alcoholism is an effect as well as a cause. It is part of a vicious circle. For a well-conditioned person of wholesome heredity to become an inebriate is not altogether an easy matter. It is facilitated by a predisposition, and alcoholism becomes thus a symptom as well as a cause of degeneration. * * * It may be added that the danger of alcoholism, from the present point of view, lies not in any mysterious prompting to crime which it gives, but in the manner in which the poison lets loose the individual's natural or morbid impulses, whatever these may be.

The following statements are taken from the report of the Board of Trustees of the Foxborough State Hospital, Massachusetts, 1909:

Drunkards are often classified for courtroom purposes as follows :

1. The accidental drunkard.
2. The occasional drunkard.
3. The habitual drunkard.

1. The accidental drunkard is one who has unwittingly drunk too freely of alcohol at saloon or club. His drunkenness is often unintentional, and frequently due to inexperience in drinking. If found without escort, he is arrested, quite as much for his own protection as for that of the public. A large percentage of cases of first arrests belong to this group.

2. The occasional drunkard is one who becomes intoxicated infrequently, and without morbid predisposing cause. Such especially are the convivial drunkards, for whom holidays or celebrations involve excess in drinking. These men seek intoxication from bravado or as the inevitable result of conviviality. Often such customs can be followed without noticeable detriment to the man's labor. Cases on their second, third and even later arrests belong largely to this class.

The accidental and occasional drunkards are cases commonly accounted responsible for their act. They are capable of refraining from intemperance when they so wish, and to that extent are willful. These two classes, which com-

prise the majority of individuals arrested for intoxication, are amenable to correctional treatment.

3. The habitual drunkard is one in whom intoxication is either frequent or constant. Medical experts show that, where drunkenness has become habitual, a predisposing cause is almost invariably traced in the mind or body of the patient. Drunkenness must in such cases be regarded as a disease, or as the form which certain illnesses take with certain patients.

The starting point of disease is often difficult or impossible to trace. The habitual drunkard cannot be sharply distinguished from the occasional drunkard. There is an intermediate group, in whom, through use of alcohol, a craving for that drug is developing. They drink not to satisfy the thirst, which water satisfies, but to fill a craving for either the immediate (stimulating) or remote (narcotic) influence of the drug alcohol. Continued use of alcohol, especially in large quantities, weakens will power and gradually destroys responsibility. In this borderland are cases who begin to show signs of abnormality—men ordinarily industrious, who let their business suffer through debauch; men ordinarily affectionate, who neglect their homes for saloon or club. They are habitual drunkards in the making.

Medical specialists in inebriety classify habitual inebriates as follows:

(a) The first group comprises men originally of normal health of mind and body, but who, through overwork, domestic or business troubles, coupled perhaps with poor hygiene, insanitary homes or poorly cooked and ill-chosen food, have lowered their power of resistance. With frequent indulgence in alcohol or drugs, self-control gradually has been destroyed, and the patient becomes powerless to discontinue his habit. The craving for narcotics (narcotomania) becomes all-absorbing. Under ordinary conditions he is unable to overcome the habit. Cases of this kind studied at the Foxborough State Hospital almost invariably have displayed further symptoms of mental abnormality. This is the most curable class of pathologic inebriates.

(b) The second group, whom physicians often treat apart, are the "periodic drunkards"—men ordinarily temperate, or even abstinent, who at periods some weeks or even months apart are seized with a mania for drunkenness, which may be continuous through a number of days. This period is followed by complete sobriety for weeks or months. This form of dipsomania, which is sometimes stimulated by willful drunkards, is more rare than other forms of inebriety, and is often classed technically as a variety of insanity.

(c) The last group comprises the defectives and degenerates among drunkards. Alcoholism of the patient or of his parents may in some of these cases have brought on directly or indirectly the low mental or physical condition. But it is equally true in other cases that imbecility, insanity or other forms of defectiveness or degeneracy have preceded and have been responsible for the excessive use of alcohol. The physicians in charge of the larger houses of correction and other institutions in Massachusetts to which drunkards are sent are inclined to assert that the large majority of habitual drunkards in their care are men of less than normal mentality. To this class must be added a considerable group of men past their prime of life, in whom the habit of drinking has intensified as the period of mental and physical decline (involution) has set in. Resistance in such cases is constantly lessened, and inebriety may become chronic. The reduction of mental power characteristic in all members of this group renders cure improbable.

There is another classification of drunkards which deserves to be considered apart. * * * This differentiates the criminal from the non-criminal drunkard. The inebriate who offends against the law by larceny, assault or any crime other than public intoxication may be found obviously among accidental, occasional or habitual drunkards. But the type of treatment which he should receive should be different from that of other members of the foregoing groups. Even among criminal drunkards, each case should be considered with reference to whether

the man is criminal during periods of sobriety or only during periods of intoxication. Among women drunkards also distinction should be made with regard to the morality of the case during periods of sobriety and intoxication. If a man or woman is criminal or immoral only when intemperate, the vice may be but a phase of the disease of inebriety, and curable with the cure of the original malady.

Obviously, the individual who inherits a craving for alcohol or other poisonous stimulants and inherits at the same time a lack of moral stamina enabling him to resist the temptation is eugenically as well as socially dangerous to the State. Such individuals are cacogenic and must therefore be prevented from contributing their traits to the new generation.

4. THE CRIMINALISTIC CLASS

From a eugenical point of view, there are two sorts of persons legally condemned as criminals. First, individuals who commit technical civil offenses, but whose instincts are social. Second, individuals who commit crimes against society on account of a lack of social morality. The second class of individuals are properly called criminalistic. If on them neither punishment nor moral precept has much effect, they are properly, then, classed as moral imbeciles and, as such, constitute a biological variety of the human stock. They are the individuals to be considered in this study, which seeks to cut off the supply of individuals innately anti-social. The following classification is based upon the nature of the crime rather than the nature of the individual. Yet there is a closer relationship between the two than would appear at the first inspection, for it appears to require a definite innate type of personality-complex to commit, in spite of punishment and efforts at reformation, the same offense naturally and continually and oftentimes almost irresistibly.

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| 1. <i>Crimes Against Chastity.</i> | 2. <i>Crimes Against Persons.</i> |
| a. Adultery. | a. Slander. |
| b. Fornication. | b. Assault. |
| c. Bigamy and polygamy. | c. Extortion. |
| d. Incest. | d. Robbery. |
| e. Prostitution. | e. Rape. |
| f. Seduction. | f. Homicide. |
| g. Pandering. | g. Suicide. |
| h. Sodomy. | |
| i. Beastility. | |

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| <p>3. <i>Crimes Against Property.</i></p> <ul style="list-style-type: none"> a. Malicious mischief and trespass. b. Petty larceny. c. Fraud. d. Embezzlement. e. Forgery. f. Grand larceny. g. Burglary. h. Arson. | <p>4. <i>Crimes Against Public Policy.</i></p> <ul style="list-style-type: none"> a. Disorderly conduct. b. Drunkenness. c. Vagrancy. d. Truancy. e. Incurability. f. Perjury. g. Illicit liquor trade. h. Counterfeiting. i. Treason. |
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Havelock Ellis in "The Criminal" says:

* * * Moreover, the attitude of society toward the individual criminal and his peculiarities must be to some extent determined by our knowledge of criminal heredity.

The hereditary character of crime, and the organic penalties of natural law, were recognized even in remote antiquity. They were involved in the old Hebrew conception, which seems to have played a vital part in Hebrew life, of a God who visited the sins of the parents upon the children unto the third and fourth generation. We know also the story in Aristotle of the man who, when his son dragged him by his hair to the door, exclaimed: "Enough, enough, my son; I did not drag my father beyond this."

A biological, psychological, or genetic analysis of criminalistic persons better adapted to eugenic studies is up to the present time lacking. Socially these individuals are outcasts; biologically many of them are feeble-minded, but the precise manner in which selfish instincts, certain types of cunning and even ability, laziness, irritability, inborn love of cruelty, lack of inhibition, lack of social appreciation and other specific ancestral traits recombine in heredity to form a new criminalistic personality, remains to be formulated. The development of the genetics of the criminal is one of the pressing tasks of eugenics. Any one or any complex of these traits so highly developed as to prevent an individual from leading a normal and socially adequate existence, if such condition is hereditary, renders that individual cogenic and places him under the ban of unfitness for reproduction. Before a given individual's line of heredity is cut off, it must be shown that such individual carries a hereditary taint—such as those just described—of danger to the race.

5. THE EPILEPTIC CLASS

Among degenerates epilepsy is so common that it deserves a separate classification under the anti-social group. Functionally this disease is often associated with feeble-mindedness, crime, inebriety and insanity, but, on the other hand, sometimes it is associated with sterling personalities of great social worth.

Epilepsy varies in degree, and, on this basis, an arbitrary scale could be elaborated. Such scale would take into consideration intensity of attack, duration of attack, exciting causes of attack, rate of convalescence, intervals between attacks, etc. Clinically, epileptics are classed under the following heads, depending upon the prevalent type of attack: 1, Grand Mal; 2, Petit Mal; 3, Mental Epilepsy.

No clearer cases of specific hereditary degeneracy than those of epilepsy have been established. Even when associated with sterling traits in worthy personalities, epilepsy is a deteriorating factor. When associated with other defects, they appear to be inter-accelerating causes of deterioration.

6. THE INSANE CLASS

There is no class of anti-social individuals more definitely and sharply marked off from the general social body, so far as their principles of conduct are concerned, than the insane class. With this class heredity plays an important part, and here again the basis of social classification is purely functional, while that of eugenics is heredity.

The very complexity of the functions of the nervous system insures the certainty of numerous kinds of nervous and mental disorders, and, although speaking in the very strictest sense, there are as many types of psychoses as there are insane persons, still mental disorders tend to follow definite directions. Dr. Wm. A. White, in his *Outline of Psychiatry*, says:

It is the duty of the nervous system to see that the functions of the several organs are rightly timed and properly adjusted in relation to one another. This is the function of the lower nerve centres.

The highest nerve centres of the cerebral cortex that constitute the physical basis of mind have quite a different function. Their duty is to so regulate and control the actions of the individual as to best serve his interests in his relations with his environment.

As with the feeble-minded, a classification based upon etiology and the degree of hereditary factors rather than one based upon social adequacy more nearly approximates the eugenic basis. The following classification is so based:

Insanity

1. Functional dementia.
 - a. Dementia praecox.
 - b. Manic depressive insanity.
 - c. Involutional melancholia.
 - d. Chronic delusional insanity.
 - e. Senile dementia.
2. Psychoneuroses.
 - a. Neuresthenia.
 - b. Hysteria.
 - c. Psychasthenia.
3. Psychoses following or accompanying organic disorders.
 - A. Nervous disorders leading to dementia.
 - a. Epilepsy.
 - b. Huntington's chorea.
 - c. Polyneuritis.
 - d. Multiple sclerosis.
 - B. Arterial disorders leading to dementia.
 - a. Apoplexy.
 - b. Arteriosclerosis.
4. Toxic Psychoses.
 - A. Caused by endogenously produced toxins.
 - a. Uremia
 - b. Diabetes.
 - c. Gastro-intestinal disorders.
 - d. Thyroidal malfunction.
 1. Hypo-secretion—Myxoedema and cretinism.
 2. Hyper-secretion—Exophthalmic goitre.
 - B. Psychoses caused by infectious diseases.
 - a. Paresis.
 - b. Pellagra?
 - c. Hydrophobia and other acute infectious deliria.
 - d. Febrile delirium.
 - C. Psychoses caused by exogenously produced toxins.
 - a. Chronic alcoholism.
 - b. Pharmacomania.
5. Psychoses of exhaustion—Delirium grave.
6. Psychoses caused by brain tumor.
7. Psychoses caused by trauma.

The first group of psychoses above named is called functional because, if lesions accompany these mental disorders, they have not yet been discovered by the pathologist but, if the theory that every psychosis is based upon a neurosis becomes established, then the sharp line of demarcation between the organic and the functional psychoses disappears and, rather, one end of the scale represents the psychoses accompanied by gross lesions and the other that accompanied by the more minute lesions.

Dr. Wm. A. White, in his book above referred to (Outline of Psychiatry), says:

* * * Mental processes, from their incidence in sensations to the release of the motor responses constituting conduct, are conceived to have as their physical substratum a continuous neural process. The process, although differently named in different parts of its course for convenience of designation, is a continuous one. * * * The standpoint of this new-psychology is distinctly different from the standpoint of a few years ago. Until its development the attitude of the psychiatrist was that of the systematic biologist classifying the several cases into families, genera, species, but classifying upon the basis of the obvious symptoms only. The keynote of the new standpoint is its distinctly individualistic trend. * * * The so-called clinical types are not clean-cut entities, but are only groups of symptoms, which either seem to occur more frequently in combination or else have been more definitely and clearly seen because of that combination. In fact types as such may be said to be in the minority. The great mass of cases seen are combinations more or less intermediate in character. The conception of types in order to be accurate must be from a broadly biological viewpoint. Types are like species. They have innumerable transition and intermediate forms. * * * Insanity, therefore, is not a disease; it is rather a class of disorders, which tend to arrange themselves with greater or less distinctiveness into groups of reaction types.

In relation to practical eugenics a specific psychosis may be directly inherited as such, in which case the disease will appear in due ontogenetic sequence. Or its diathesis only may be transmitted. In some types, such as chronic alcoholism and paresis, heredity appears to be the foundation factor, but the poisons respectively of alcohol and of *treponema pallidum* must conspire with this defective background in order to produce the disease. So in the group of so-called functional psychoses there may be either a weak or strong diathesis—the one requiring a relatively great stress and the other a relatively little stress to bring on the ailment. To the extent that a given strain possesses a hereditary constitutional make-up liable to display a psychosis under anything less than an extraordinary formidable stress of circumstances, there exists in such strain a cacogenic variety of the human race.

As in the case of the feeble-minded and criminalistic, the personality of the individual is subject to great variation. It appears that practically every normal function is susceptible of disorder and the

extraordinarily numerous possibilities of combinations of traits, some normal and others perverted, make the total array of possible psychic conditions almost incomprehensibly great. Psychiatrists, however, have found that the commonest disorders tend to fall along certain definite lines and hence the possibility of classifying this sort of degeneracy.

7. THE ASTHENIC CLASS

The great bulk of the world's work is accomplished by strong and hardy individuals. It is true that great contributions have been made to civilization by physical weaklings, but this is rather the exception: Physical weakness, if hereditary, is cacogenic, for a race of weaklings cannot long endure. Physical weakness is not the menace that feeble-mindedness is, but it is, nevertheless, great. A logical classification of physical weaklings has not yet been made. This class includes individuals who are sane, are not feeble-minded, are not deformed and are not paupers, nor do they belong to any other of the socially inadequate groups, but still they lack constitutional vigor and stamina. Some of the older physicians refer to "tone" as a state of general weakness that appears to complicate all diatheses.

It might be possible to classify asthenic individuals in reference to the organs and tissues that are weak, such as individuals with weak bones or muscles, or with weak vital organs, such as lungs, arteries, stomach, or kidneys. Although not especially predisposed to any specific disease, yet they fall prey to almost any stressful circumstance, and the innate weakness appears to interfere with the full exercise of the normal function of mind and body in either physical or intellectual pursuits. "A sound mind in a sound body" is as much the motto of eugenics as it appeared to be the motto of the ancient Greeks. Hereditary physical inadequacy is cacogenic.

8. THE DIATHETIC CLASS

In regard to the diathesis or predisposition to a specific ailment or undesirable condition, the problem does not turn upon whether diathesis exists at all, but only to what degree and in what cases diathesis is a fact and to what degree it is injurious to the welfare of the race.

Hereditary traits do not date from birth, for birth is only a change of environment. The hereditary potentialities of an individual are determined past recall when the two parental gametes meet in fertilization to form the zygote.

By direct heredity is meant the transmission of a trait or a quality that will, in spite of controlled environment, appear at some time in the course of development of the individual. Thus the extra digit in polydactylism appears early during the second month of gestation. In children destined to be brown-eyed, the brown iris pigment appears during the first few days after birth. Normally, a child begins to shed his milk teeth at the age of about six years. With males, the beard appears in early manhood. Usually Huntington's chorea appears in tainted individuals at the age of approximately 50 years. All of these are traits of direct heredity. In these, heredity is the primary factor, environment has but little to do with them.

There is a second type of heredity, which might well be called "indirect heredity" or "heredity-diathesis," "susceptibility" or "pre-disposition." In this sort of heredity environment plays a much greater part in determining the human trait or condition than it plays in direct heredity, but even in such cases the exogenous forces are not all-important. Heredity is as it were the foundation upon which environment builds the trait. In such cases heredity, although a less powerful factor, is just as definite as with direct inheritance, and the end product is a composite of hereditary and extrinsic factors. Thus, people do not, biologically speaking, directly inherit tuberculosis and yet they inherit directly a constitutional make-up possibly both functional and chemical, as well as structural; that causes them to fall an easy prey to this disease. People do not inherit poisoning of the poison ivy (*Rhus toxicodendron*) type, still some persons are immune to the effects of this poison, while others readily become affected by it. Thus, in reference to their susceptibility and immunity, there appears to be a chemical difference in persons which is directly hereditary, but it requires the presence of an exogenous agent, in addition to the innate lack of resistance, to cause the affection.

Thirdly, there are many diseases and conditions in which the hereditary difference of people plays a very minor role or is entirely negligible as a causative factor, while environment plays the all-important part. Thus, everybody appears to be more or less susceptible to "colds," and possibly to the more infectious virulent infectious diseases such as rabies.

There are thus all degrees of the influence of heredity in determining a human condition. Let the following scale, beginning with absolutely no influence and ending with all influence, represent this fluctuation.

1. Gunshot Wounds.		
2. Rabies.	Purely environmental.	Exogenous forces overcome heredity.
3. Tuberculosis.		
4. Decay of Teeth.	Mixed hereditary and environmental—	
5. Old Age.	"diathetic."	
6. Senile Graying of Hair.		
7. Immunity to Ivy Poisoning.		
8. Insanity.	Purely hereditary.	Heredity overcomes environment.
9. Imbecility.		
10. Polydactylism.		

There is, thus, no sharp line between diathesis and direct heredity, on the one hand, and between diathesis and purely extrinsic influences, on the other. They appear to grade into one another.

Even within the same group of disorders, *e. g.*, insanity, there is a wide range in the relative roles of heredity and of extrinsic factors in the etiology of the disease.

The Twenty-third Annual Report of the New York State Commission in Lunacy (February 14, 1912) gives the following table, showing heredity in cases of admissions to the fourteen state hospitals for the insane for the year ending September 30, 1911:

A. *Psychoses with a high percentage of cases with family history of insanity or nervous diseases.*

Psychosis.	Percentage of cases with history of insanity, nervous diseases, etc.
Dementia præcox	59.2
Involution melancholia	61.6
Alcoholic	54.2
Allied to manic-depressive	56.7
Epileptic	60.2
Hysterical, psychasthenic, neurasthenic	61.9
Other constitutional disorders and inferiorities	57.8
Imbecility, and idiocy with insanity	58.5

B. *Psychoses with low percentage of cases with history of insanity or nervous diseases.*

Senile	41.7
Dementia paralytica	38.4
Infective-exhaustive and auto-toxic	41.7
Allied to infective-exhaustive	33.3
Paranoic conditions	46.1
Depressive hallucinoses	37.5

Excepting at the Kings Park and the St. Lawrence State Hospitals, none of the fourteen New York State hospitals for the insane maintains field workers for the express purpose of studying, in the home territories, the family histories of persons committed to their respective institutions.

The very cursory examinations into family histories, which are doubtless the best that can be provided with the present facilities—or rather lack of facilities—for such study, render it impossible to secure conclusive data from such records. “Heredity” without extended data for each specific case means but little. However, the result of the examinations recorded in this table are at least indicative of the true conditions, and are so evaluated.

If it can be established that some families and some individuals of the human race are by nature susceptible to specific diseases, while others are not, then there is a difference in the eugenic value of such families and such individuals.

A. *Species Difference*

There is no one who can doubt that the species differ in their susceptibility and immunity to specific diseases. Every hog breeder knows that hog cholera may destroy his whole herd, while the other animals of the same farm (including the owner himself), although doubtless infected, do not contract the disease. Other diseases, such as tuberculosis, affect men, cattle, and chickens, but apparently do not affect horses. The development of varieties of wheat and corn resistant to certain fungous diseases are among the greatest joint triumphs of modern breeding and agronomy. The immunity of the zebra and the susceptibility of the horse to the disease following the bite of the tsetse fly is a known fact.

Differential immunity in reference to species has ample and obvious data to support it. The determination of the degree of variation in immunity among races of the same species—in this case the human species—and among strains or families within these races and in turn among individuals of the same family is the problem that concerns this study.

B. *Racial Difference*

The following study in “Biostatistics of the Jewish Race Pertaining Especially to Immunity and Susceptibility,” by Lester Levyn, M. D., of Buffalo, N. Y., is reprinted with his permission from the

New York Medical Journal of May 10, 1913. It establishes the racial differentiation in immunity:

The relative immunity to many contagious and infectious diseases and susceptibility to certain other infections (principally of a neurotic origin) possessed by the Jewish race present a field of study of a most interesting nature. The immunity can be traced as far back as the Talmudic periods, and well proved facts and statistics give evidence of its survival today. Why should the Jew, physically inferior to his Christian brethren, ward off with more potent factors the onslaught of disease and emerge from the conflict with a lesser mortality? Let us for a moment make a brief anthropological study of the Jew. His average height is 162.1 cm., span of arms 169.1 cm., girth around chest about 81 cm., making him the narrowest and the shortest of races. The skulls are chiefly brachycephalic, probably attributable to cerebral development. There is no race that appears less strong, and none that can so well resist misfortune. The reason for this is that in soul as well as in body, morally as well as physically, the Jew is the product of a selection that has lasted two thousand years, and has been the most severe and most painful which living beings have ever had to endure. In appearance, notably in the large Jewries of the East, he is small, puny, sickly, pale and shrunken, yet under this frail exterior is hidden an intense vitality. "The Jew may be likened to those lean actresses, the Rachels and Sarahs, who spit blood, and seem to have but a spark of life left, yet who when they have stepped upon the stage put forth indomitable strength and courage." Taking into consideration then the mode of life to which the race was so long subjected it is not strange that it should present peculiarities to the physiologist and statistician.

The first thing to attract our attention is the fact that the longevity of the Jew is greater than that of any other race. This is so well established that in certain countries, America for instance, the Jews are regarded by life insurance companies as especially desirable clients. Almost anywhere, particularly in those countries where the laws are not such as to render existence intolerable to them, the average duration of life among the Jews is considerably higher than that of adherents of other religions and faiths. This does not apply solely to countries where the Jews are largely of the well-to-do classes, but as well to the poor Jews of Germany, Hungary, England and Roumania. The United States Census Report states his "expectation of life" to be fifty-seven years, while that of his Christian brother is but forty-one years. The difference is visibly one of distinction.

We should not be justified, however, in regarding this superiority as a racial phenomenon of a purely physiological nature. It is doubtless due in large part to the difference in customs, to the family spirit of the Jews, to their devotion as parents, to the care of the mother for her children; and also to the chastity in the marriage relations; to the prescriptions of the law, and to the consideration and respect shown by the husband for the health of his wife. Much of the racial relative immunity to various diseases may be directly attributed to a strict adherence to the laws governing the Jewish faith, which embody rigid aphorisms on bodily and dietary cleanliness. Many of the fundamental laws of Judaism have for a nucleus hygienic principles. The early rabbinical teachings forbade eating the flesh of an animal that had taken poison, or the eating of meat and fish together, or drinking water left uncovered over night. The danger of drinking water at the beginning of the seasons was taught the people. In times of plague the rabbis advised the necessity of remaining at home and avoiding the society of men. It was forbidden to touch during a meal parts of the body, where perspiration was profuse, to eat from unclean vessels or with dirty hands, or to eat hearty meals before retiring. It is thereby seen that the Torah wished to make of Israel a people that should be healthy and holy, *sanus et sanctus*.

The laws concerning the preparation and selection of all flesh for food, scorned and ridiculed for many generations, are now regarded as important factors in the eradication of disease. In the slaughter houses the methods em-

ployed by the *shochets* in the selection of animals for consumption are worthy of mention. No animals are considered fit for food which show but the slightest evidences of illness or whose bodies in any way are wounded or injured. Such animals are branded unclean, and therefore unfit for food. True the sacrifice of such animals creates a monetary loss, but any sacrifice conducive to an increased resistance to disease and prolongation of life is one which the public will gladly suffer.

In enumerating the various diseases to which the race is comparatively and relatively immune, that which stands pre-eminently foremost on the list is tuberculosis. Unfortunately, advancing civilization, with its congestion of population and subsequent increase in ghetto life, is tending to diminish the extent of this immunity. Dr. Behrend says: "The comparative immunity from the tuberculous diathesis has been recognized by all physicians whose special experience entitles them to express an opinion." Despite the horrible ghetto environment statistics evidence a lesser extent of the disease than among other races, while in the better classes of Jews, not restricted by ghetto life, they are but rarely victims of the disease. Many factors peculiar to the race are instrumental to the production of this immunity. Lombroso considers the immunity to be in large part attributable to the fact that the vocations of the Jews require little or no exposure. Another important cause is the cleanliness of the housewives. Instead of resorting to extensive use of the dusting brush they utilize damp cloths in wiping all surfaces, by this means raising less dust and diminishing the risk of inhaling tubercle bacilli. Lastly, but of vast significance, is the fact that the body vitality is not diminished by excessive alcoholic indulgences.

The liability of the race to pneumonic infection is less than that of other races. Reasons for this are that their occupational pursuits are largely of a confining nature, and do not necessitate exposure to the vicissitudes of the weather. Of greater moment is the fact of the race being non-alcoholic.

Smallpox has a less marked affiliation for the race. This malady attacks the Jew far less frequently than the non-Jew. During the epidemic of smallpox of 1900-1903 it is remarkable to note that the race was virtually free from its ravages. The urgency and necessity for vaccination have always held sway among the Jews, they being strong supporters of the efficacy of vaccination, and the promptness with which they accede to it has established this freedom.

The existence of typhoid fever is somewhat less among the Jews than among other races, and the death rate from that disease is lower among them. For a period of six years in the city of New York the typhoid mortality rate was as follows: Germans, 28.01; Italians, 26.16; Irish, 25.56; English, 19.77; French, 18.29; Bohemians, 18.04; Armenians (white), 17.40; Hungarians (mostly Jews), 12.36; Russians and Poles (mostly Jews), 9.19.

The racial resistance to intestinal disorders is far greater than that of other peoples. In the city of New York, in the most densely populated Jewish settlement, where 80 per cent. of the inhabitants are of that faith, an analysis of the statistics of the Department of Health shows that for a period of ten years diphtheria and croup killed 5 per 100,000 less than among the Christian race. Bearing in mind the low morality of urban Jews, remembering the admirable conditions for the spread of infection prevalent in the East Side, knowing the congestion, the poverty, the miserably ventilated sweatshops, the never-ceasing toiling, can we place belief other than in their wonderful powers of resistance!

The low mortality is not confined to the adults of the race, but applies to infants as well. The enjoyment of a lower infant mortality is traceable to the deeper devotion bestowed in the children by parents, and the fact that weakened vitality due to alcohol and lues is not inherited. The precocity of the Jewish mind and the rapidity of mental growth are also largely due to this abstemiousness.

The number of stillborn children is much smaller among the Israelites than others, and there are notably fewer illegitimate births.

The prevalence of venereal disease is not nearly as widespread as is seen in others. The ancient and ever present custom of circumcision is the main contributing factor to this absence, enhanced by generations of culture, suffering

and tribulations, which have placed the senses under the rule of reason. The race stands today as the least carnal of all.

While the race enjoys this relative immunity to many diseases, it is not to be envied in every respect, for there remain afflictions which seem particularly prone to attack the Hebrew. Especially noteworthy of mention are maladies of the nerve centres, cerebral and spinal diseases and diabetes mellitus. The latter occurs from two to six times more frequently among Jews than among non-Jews. Strangely, while the disease exhibits such a marked predilection for the race, it is better endured than among other races. Von Noorden states that patients with glycosuria lasting for years, without much discomfort, die from what is supposed to be heart failure. Death through coma is more commonly seen in the Jew (Stern). With our present knowledge of the etiology of diabetes mellitus the only reasons offered for the predisposition of the race to the disease are the nervous theories, together with such contributing factors as sedentary habits, lack of exercise, high living and overfeeding.

Of the nervous disorders, hysteria and neurasthenia affect the race most frequently. The causes commonly assigned are: (1) The fact that they are largely town dwellers, these functional nervous diseases being common to the population of a great city; (2) neurasthenia is seen mostly among the commercial classes, bankers and speculators, of whom the Jews comprise a great proportion. However, those of the poorer classes, laborers and artisans, are not exempt; (3) consanguineous marriage was at one time a reason offered, but the more modern views that such marriages when contracted between healthy individuals are not at all detrimental to the health of the offspring contradict this theory; (4) the repeated persecutions and abuses to which the race has been subjected; (5) such massacres as occurred in Kishineff, in 1903, were of frequent occurrence in the Middle Ages, and their effect on the nervous system of the race could not be other than a rigorous one, transmitted hereditarily; (6) the excessive mental and intellectual tax demanded to overcome and outspread environment.

While these conditions rarely, if ever, cause death, yet they exert a most harmful tendency. Kraft-Ebing states: "Neurasthenia and other nervous diseases affect the Jews with exceptional severity."

Amaurotic idiocy and the Mongolian type of idiocy are frequently observed among Hebrews. The causes again advanced are referable to neurotic taints. Marriages of those of near kin have been considered a prominent cause for the prevalence of idiocy in the race, but statistics do not bear out this contention. "It appears that the proportion of idiotic children who are the offspring of cousins is not in excess of the ratio of consanguineous marriages to marriages generally, and the sole evil result of such marriages is the intensification in the offspring of some morbid proclivity common to both parents." In summarizing, it may be said that the race suffers chiefly from the functional nervous diseases, and that the organic nervous degenerations such as locomotor ataxia and progressive paralysis of the insane are uncommonly seen. Minor states that serious organic diseases of the brain and spinal cord are less frequently met with among Jews than among others.

Apoplexy is another affliction which attacks the Jew with a great degree of frequency. Lombroso attributes the connection to the racial temperament of emotion, struggling with adverse conditions and the persecution of centuries.

Diseases of the heart and circulatory system are more common in Jews, in the United States being double that of the general population. Articular rheumatism so frequently seen in the race is an important etiological factor in the production of organic heart disease. Arteriosclerosis also prevails largely among members of the race, owing to excessive activity, worry and care. Intermittent claudication attacks the race more often than others, which condition is possibly due to the prevalence of arteriosclerosis.

The proportion of blindness is greater among modern Jews than among non-Jews. In America, however, this does not hold true, owing to the stringency of the immigration laws, which prevent the entrance of defective classes, including the blind. Considering the etiology of blindness it might be expected that the

affliction should attack the race less than others. The most important cause of blindness in the new-born from 30 to 50 per cent. of cases is gonorrhea infection from the mothers. It is a well-known fact that gonorrhea is comparatively rare in Jewish women. Conceding this it would be reasonable to think that Jews would have at least 25 per cent. less blindness than non-Jews. In spite of this the condition is common to the race. Consanguinity, careful investigators contend, is not a factor in the production of blindness, apart from heredity. Trachoma, glaucoma and diseases of the cornea and uveal tract are largely seen in the race, all of which conditions may lead to blindness.

It is most interesting to note that suicide in the race appears to be less common than among others. Among ancient Hebrews but few cases are recorded, only four cases being specifically mentioned in the Old Testament, those of Samson, Saul and his arrow bearer, and Ahitophel. Later it appears to have occurred with greater frequency. Josephus records the suicide of several thousand Jewish soldiers who were besieged by the Romans in the stronghold of Masaden in the year 72 or 73 A. D. During medieval periods of persecution the Jews often chose self-destruction as a means of relief. In modern times the Jews are less liable to suicide. It is generally known that suicide is on the increase in most of the European countries as well as in America. Marselli explains this increase as due to the effects of "that universal and complex influence to which we give the name 'civilization'." Yet, notwithstanding this pressure, the Jew at present rarely resorts to self-destruction. Among non-Jews about one-third of all suicides are directly or indirectly attributable to abuse of alcoholic beverages, and the paucity of such cases in Jews is again explained by their abstemiousness.

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C. Family and Individual Differences

Besides the species and racial differences, there is also a family or strain difference and lastly within the fraternity an individual difference in natural susceptibility to a specific disease. The following case and family histories were selected by Dr. A. J. Rosanoff from his histories to illustrate these facts.

The first history is that of a family characterized by *manic-depressive* insanity, in which family many of the individuals appeared to break down *almost independently of exogenous causes*. In the second family there is a nervous tendency, but, compared to the first family, they are quite stable. In an affected individual of this second

family it required a *great array of formidable exogenous causes* to bring about this disease.

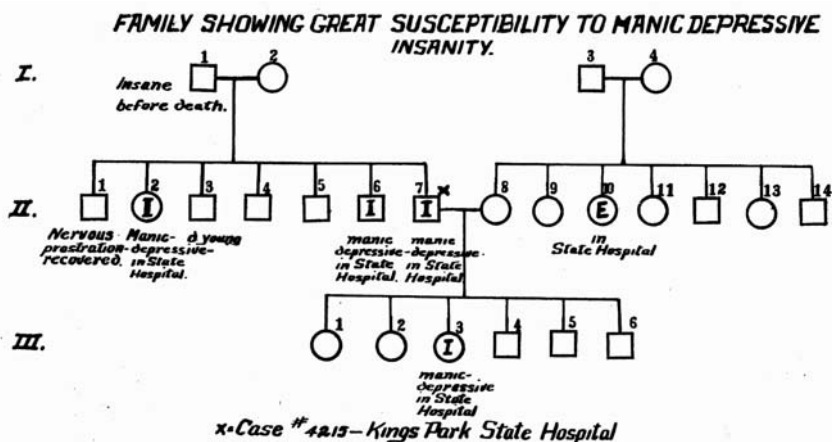


FIG. NO. 5

Family history:

II-7. 2678-6624. Admitted Dec. 20, 1905—53 years. First attack 20 years ago, 1885 (at 33 years). Was in Bloomingdale for two months, has had several attacks since. Present attack, commitment paper says: "Wishes to use the telephone to speak to Mr. Ryan and others with whom he has important financial engagements. Said that he went into business in Wall Street three months ago without a cent and now is worth \$2,000,000; that his present incarceration is due to a conspiracy of his wife and certain financial people, who are afraid of his power, fear he will ruin them." On admission: "Said he was glad to be sent here, that he was of a happy disposition and could get along any place." Exceedingly irritable when questioned; shows distractibility and flight. May 7, 1906: "Quiet and composed." June 11, 1906: "Discharged as recovered." Readmitted April 29, 1910: "Elated, said he was perfectly contented with life." "Could draw a cheque for any amount, which would be immediately honored at any of the banking houses in New York City. His influence is so great that, should he enter any broker's office, he could immediately cause a rise or precipitate a fall of stock on the market by purchasing it for a rise or a fall." "Restless, does not sleep at night." June, 1910: "Noisy, destructive and mischievous; tears clothing, breaks plaster, etc." "Urinated and defecated on the floor of his room and threw faeces out on the hall." July, 1910: "Today climbed water leader in courtyard and escaped to roof of cross hall; was gotten down by charge nurse." Oct. 2, 1910: Died of dysentery. Patient had graduated from C. C. N. Y. Said he was not a good student, because he was always mischievous, never inclined to study.

II-6. 2676. Admitted Nov. 6, 1905. First attack 20 years; was at Blackwell's Island in 1862. "Many previous attacks." On admission: "Great depression and agitation, cried, stated he was justly punished for all the sins of his past life." "I will be lost and damned; I am more than an outcast; my friends do not recognize me or care for me; there is no worse sinner on earth; if I was ground up into smoke I would not think that I had been punished enough." Jan., 1906: "Failing physically, now confined to bed, as he is too feeble to be up and around." "Questions had to be frequently repeated, and after long pauses he answered in a barely audible tone of voice." Oct., 1906: "Constantly picks at his ears and hands." Nov. 3, 1906: "Died."

II-2. 2882-4427-30067. Admission May 8, 1906—29 years. First attack in 1894 (age 29 years) was at Amityville. Second, third, fourth and fifth attacks between 1895 and 1904 at New Jersey State Hospital, Morris Plains, N. J. Sixth attack: Admitted to K. P. May 8, 1906: "Laughs and talks incessantly for hours at a time. Sleepless for the past five nights; spends sleepless nights singing and talking wildly for hours at a time." May 25, 1906: "Assaulted night nurse; kicked her in the stomach and pulled her hair." Nov. 21, 1906: "Cheerful, agreeable, industrious." Aug. 25, 1907: "Discharged as recovered." Seventh attack: Admitted to K. P. Nov. 20, 1907: "Would lie in bed all day without excuse; has been delirious and wild." On admission: "Elated, very loquacious, showing distractibility and flight of ideas, restless, very erotic, making obscene suggestions and remarks." Jan., 1908: "Improved, works in embroidery class." March, 1908: "Disturbed, noisy, threatening." June, 1908: "Quiet, neat, industrious." March, 1909: "Paroled." Sept., 1909: "Parole extended." Nov. 22, 1909: "Returned from parole by two attendants, resisted and caused much trouble en route." April, 1910: "Disturbed, receiving paraldehyde." Oct. 25, 1910: "Paroled." April 24, 1911: "Parole extended." June 15, 1911: "Returned from parole; somewhat confused; careless, untidy, indolent." Aug., 1911: "Disturbed, restless, untidy." Nov., 1911: "Much improved, very industrious, doing fancy work, cheerful." Dec. 21, 1911: Paroled. June 18, 1912: "Parole extended."

II-10. 6295-44746. Admitted Jan. 5, 1910-62 years. "Has had epileptic convulsions since she was in her 'teens.'" Commitment paper: "Patient sad; at times she has thought she saw her parents and others in their heavenly home. "At times she is very irritable and abusive." Jan. 31, 1910: "Three convulsions since admission." "Thinks her aunt, who died some time ago, will meet her when she is called home by Jesus Christ, her Blessed Savior." March, 1910: "Screams if assisted at dressing, going to and from meals, etc. Says everyone is trying to kill her." Aug., 1910: "Neat, tidy, clean, industrious, assisting with the mending." Sept., 1910: "At times thinks she hears God's voice. Reads her Bible a great deal." March, 1911: "Irritable, childish, easily excited. At times very noisy and yells. Convulsions at irregular intervals."

III-3. 2125-2769-4215-16424. Admission Oct. 27, 1904—19 years. First attack 1898 (age 19): "Despondent, wept, conversed but little, slept poorly, appetite was not good, heard strange voices; was three months in sanitarium; recovered." Second attack 1900: "Again despondent; three months in sanitarium; recovered." Third attack 1901: "Again despondent; five months in sanitarium; recovered." Fourth attack: "Same; in sanitarium six months; recovered." Fifth attack began Oct. 15, 1904: "Downhearted, laughed to herself, wept, talked to herself, slept and ate poorly, imagined people were in her room, heard strange voices; remained in one place for hours taking no notice of anything; then became disturbed, destructive, and violent and was committed to K. P." On admission: "Depression, retardation in movements and speech, difficulty in thinking; thinks she is dead." June 14, 1905: "Discharged as recovered." Sixth attack admitted to K. P. March 15, 1906: "Patient said she quarreled with her mother; does not sleep well nights; she hears noises and voices; at times she is so depressive that she has thought of killing herself; was restless." July, 1906: "Filthy in habits, requires to be dressed and undressed, destroys her clothing, exposes her person." Feb., 1907: "Discharged as recovered." Seventh attack, admission Aug. 10, 1907: "Boisterous, says her mother is a damned fool; says all the time she wants to get married; at times extremely erotic and obscene; often says, 'Oh, I am going out of my mind, I know I am, I can't control myself.'" Nov., 1907: "Says she is so restless that she cannot keep still." Feb., 1908: "Very stupid and untidy; has to be dressed and undressed; when addressed will not converse; retarded in movements, but shows no depression." March, 1909: "Destructive, noisy and violent." Nov. 9, 1911: "Has shown steady improvement; is less irritable; industrious and interested in ward activities." Paroled Nov. 12. March 30, 1912: "Returned from parole; patient was restless both day and night; interested in every man that passed the house."

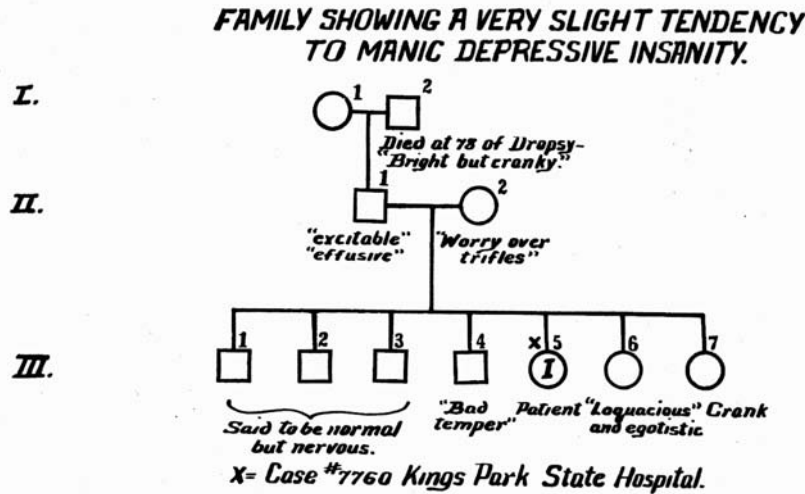


FIG. No. 6

Family History. Paternal grandmother (I, 2) died at 78 years of age of dropsy; she was bright, but cranky; would often scold her son for no cause; was emotional, had strong unreasonable likes and dislikes; was more fond of her other children than of her son (II, 1) (patient's father), who kept her when she was old until she died. Father (II, 1) is excitable, emotional, rather effusive, becomes lacrimose when speaking of his father, who died many years ago. Mother (II, 2) is normal, but is said to be somewhat inclined to worry over trifles. One brother (III, 4) has "a bad temper," abused his younger sisters; eloped and married at the age of 19 years, and has kept away from the family ever since. One sister (III, 6) is loquacious and egotistical. Another is more or less "nervous" and "excitable."

Personal History. Psychosis allied to manic-depressive insanity. Age 28. Admitted May 27, 1911, —. *The conditions which brought about the psychosis were truly formidable.* The patient, a young woman, of excitable, emotional and rather unstable stock, described as cranky, hot-tempered and stubborn in disposition, becomes involved in a love affair followed by an engagement at the age of 23 years. During the engagement period she reluctantly permits her fiancé to have sexual relations with her, and during the same period she discovers in him disagreeable and repulsive traits, but at the end of a year marries him in spite of her repulsion, feeling that it is "too late to back out." Her married life is unhappy. The husband turns out to be a selfish, inconsiderate and jealous man; he supplies her with money very stingingly, though he goes out, plays cards, stays out evenings; he prevents her from having any diversions and objects even to her visiting her own relations. She desires children, but the husband does not, and she is deprived of sexual gratification owing to the precautions taken to avoid impregnation. About a year after marriage, after a quarrel on account of her going out to visit her folks, her husband leaves her. At the end of a week "her pride is broken" and she goes to his place of business to beg him to return. Friction between them continues, and two years later he deserts her again. Though she begs him to return he refuses. She becomes depressed, discouraged, develops self-accusations; suffers much from insomnia and loss of appetite and becomes much run down physically; then she grows very irritable, has occasional agitated tantrums; later begins to think people are watching her and taking snapshots of her to obtain evidence to be used by her

husband in a suit for divorce; finally she makes several suicidal attempts and is committed.

Patient was born in New York on Nov. 20, 1883. In childhood had measles, but otherwise had been physically well. She went to school at the age of 8 years and left at 17, having reached the fifth grammar grade; she did not get along well in her studies, was left back several times, but her failures were attributed to disinclination to study and not to dullness; her attendance was regular. After leaving school she stayed at home and did housework.

Patient describes her own disposition as sociable, but cranky and easily irritated and "soft," that is to say, easily moved to tears when her feelings were hurt. Was rather fond of going out. Occasionally read a newspaper, but very seldom any novels.

Physically she was evidently somewhat run down; weighed 115 pounds—her usual weight being 130 pounds. She had frequent crying spells; she never thought she would land in a place like this. During the first two or three months following her admission her condition improved slightly, as her listlessness and bewilderment disappeared. She cooperated better in medical examinations and was found to be well oriented, showed a normal grasp of her surroundings and a good memory of recent and remote occurrences. She continued, however, to have crying spells and even tantrums of agitation; said she wanted to die, etc. From time to time she would express delusional ideas, which were, however, rather in the shape of suspicions and conjectures, and not well-established delusions. Thus she thought that her husband had been the cause of insanity, not in her case alone, but also in the case of some other patients here. She thought also that he had people here spying on her in order that they might obtain evidence for a suit of divorce. She believed that many people here knew of her disgrace and humiliation, and that they talked about her. At one time she expressed the idea that her sister and parents wanted to be rid of her, as she had caused them so much trouble.

She improved, however, gradually. In the latter part of September, 1911, she weighed 135 pounds. She was more composed mentally and more rational. She now (October, 1911) employs herself in making baskets.

In November, 1911, though not yet recovered completely, she was discharged into the custody of her relatives at their request. Some weeks following her discharge she wrote a letter to the hospital stating that she was again living with her husband and that she was feeling entirely well.

These two family histories justify the statement that there is a difference in families in reference to their innate resistance to manic-depressive insanity. In the first family the disease might almost be said to be inherited, so surely was the trait to appear; in the second family it is quite clear that there is not a direct inheritance of this disease, but there is, nevertheless, a specific predisposition or diathesis to it.

To summarize—the factors of heredity and environment are constantly interacting to bring about end results in human as well as in plant and animal characteristics. No useful purpose is served either by eugenists or by humanitarians in striving to claim for the one or the other of these forces the all-important role in human affairs. One might as well contend that the sodium plays a more important part than chlorine in the organization and characteristics of common salt. Truth, not victory for an object of especial solicitude, should be sought.

We should be content to determine the relative influence of nature and nurture in selected cases or groups of related cases. In those wherein heredity is demonstrated to be the prime factor, the control of heredity should be the means used by society in controlling the qualities so determined. It is the business of eugenics to seek out such instances and to develop a practical method of control. It is the business of education, medicine, humanitarianism and other environmental or euthenical agencies to find out to what extent and how the hereditary qualities of individual human beings can be directed along desired channels and to exert every possible effort in so directing them. The one concerns educability; the other education.

9. THE DEFORMED CLASS

The extent of hereditary ailments in the human race is extremely great. The more complex the organism or machine, the greater the likelihood that it will develop a serious defect. The human organism is the most complex of all and, for each functional trait, there is doubtless a complex structure susceptible of defects and variations tending to follow certain set lines, upsetting the essential functioning and more or less handicapping the entire organism. Organic progress seems to have been effected by the "rouging out" of individuals possessing in their make-up unfit traits. Nature has been fully as ruthless in her processes of eliminating physical deformity as in striking down the possessor of mental feebleness. The more grossly deformed individuals such as *acephalus* ("freaks" or "monsters" as they are sometimes called) are not in themselves cacogenic, for they are either cut down early in ontogenesis, or, if permitted to live, they are incapacitated for parenthood. If such individuals could reproduce, many of their traits would doubtless be hereditary, but as such defects are serious enough to cause death before the reproductive age or to prevent reproduction, such deterioration has so overdone itself that the excess acts eugenically. The following table excludes these so-called monsters because not they, but the stock that produces them, is cacogenic. At this juncture, it is again opportune to call attention to the fact that it is the border-line defect that is most cacogenic, for it is a hereditary defect that can, with the aid of a kindly civilization, be bolstered up into a semblance of social fitness and then encouraged, and often enabled thereby to propagate its kind.

A deformity is a variation from the ordinary or normal structure that interferes with the normal functioning of the organ, and, conse-

quently, handicaps or incapacitates the individual possessing it. So close is the relation between structure and function that deformity in its more general sense can be made to include at least the basis of all human ailments. The following table outlines this view:

Deformities

1. Gross morphological.
 1. Patent, *e. g.*, Hare-lip.
 2. Latent, *e. g.*, Ectopia cordis.
2. Histologico-chemical, *e. g.*, Color blindness and Hæmophilia.

For the purpose of this study, however, the term "deformity" is limited to gross morphological defects. The following table gives in logical array a list of the principal types of gross patent deformities that are known to be hereditary and hence cacogenic:

Congenital External Deformities

1. General.
 - A. Dwarfs.
 1. Ateleiosis (Little man).
 2. Achondroplasia (Premature ossification of bones).
 3. Rachitic dwarfs.
 4. Cretinoid dwarfs.
 - B. Giants.
 1. Geants infantiles (Great size with infantile somatic and psychic traits).
 2. Acromegalic giants.
 - C. Mongoloids.
 - D. Sex-deformities.
 1. Hermaphroditism—many combinations of different degrees of male and female elements.
 2. Sex hypoplasia in male (Eunuchoidism).
 3. Sex hypoplasia in female.
2. Hair and Skin.
 1. Hypertrichosis.
 2. Hypotrichosis.
 3. Absence of nails.
 4. Albinism.
 6. Melanism.
 6. Xanthism.
 7. Lentigo.
 8. Ichthyosis (several varieties).
 9. Thickening of outer layer of skin.

3. Head.
 - A. General.
 1. Microcephaly.
 2. Hydrocephaly.
 3. Stigmata of degeneration.
 - B. Mouth and Lips.
 1. Hare-lip.
 2. Cleft Palate.
 3. Congenital hypertrophy of lips.
 4. Macrostoma.
 5. Microstoma.
 6. Absence of teeth.
 7. Third dentition.
 8. Supernumerary teeth.
4. Neck.
 1. Cervical auricles.
 2. Wry neck (Torticollis).
 3. Cervical ribs.
5. Trunk.
 1. Vertebral deformities.
 1. Increase in number.
 2. Deficiency in number.
 3. Synostosis.
 4. Spina bifida.
 5. Spinal curvature.
 2. Ribs.
 - a. Fusion of ribs.
 - b. Suppression of ribs.
 - c. Increase in number.
 3. Scaphoid Scapula.
 4. Congenital deficiency of clavicle.
 5. Congenital elevation of scapula (Sprengel's shoulders).
 6. Absence of pectoral muscles.
 7. Funnel chest (Pecus excavatum).
6. Extremities.
 1. Absence of radius.
 2. Absence of ulna.
 3. Club-hand.
 4. Brachydactylism.

5. Syndactylism.
6. Polydactylism.
7. Ectrodactylism.
8. Rudimentary or absent patella.
9. Congenital genu recurvation.
10. Congenital curvation of legs (lateral).
11. Absence of tibia or fibula.
12. Club-foot (Talipes).
13. Congenital dislocation of the hip.

Eugenics is concerned with physical fitness no less than with mental and moral adequacy, for a race cannot long endure and rise in culture unless its members be strong and dexterous physically. Mate selection has always been and doubtless always will be greatly influenced by patent personal physical fitness and comeliness; it is a determining factor of high value. Following the growth and diffusion of knowledge concerning the hereditary nature of physical defects, hereditary physical potentialities will also become assets in selection. Thus eugenical education influencing mate selection on a nation-wide scale must be depended upon to stamp out physical deformity when it is not associated with mental or with moral unfitness; when it is so linked segregation, supported, if need be, by sterilization, appears to be the proper eugenical remedy.

10. THE CACÆSTHETIC CLASS

Social adequacy depends so much upon the proper functioning of the organs of special sense that individuals suffering from their absence or their deformity are properly considered as one of the primary groups of the socially inadequate. The organs of special sense are very intricately constructed and hence subject to a correspondingly numerous and serious group of disorders.

The following classification of hereditary defects of the sense organs is based upon anatomical defects, which in turn destroy or pervert normal function:

I. Eye.

1. Microphthalmus (including anophthalmus).
2. Megalophthalmus.
3. Atrophia Nervi Optici.
4. Retinitis Pigmentosa (including hemeralopia).

5. Color Blindness.
6. Glaucoma.
7. Cataract.
8. Ectopia Lentis.
9. Degeneration of the cornea.
10. Nystagmus.
11. Ophthalmoplegia (including ptosis and squint, which latter is also called strabismus or cross-eye).
12. Aniridia (including colobomba).

II. Ear.

1. Rudimentary development of tympanic cavity.
2. Absence of tympanic membrane.
3. Absence of ossicles.
4. Absence of lamina spiralis.
5. Displacement or Reissner's membrane.
6. Mucus vegetation of connective tissues.
7. Absence of organ of corti.
8. Too few ganglionic cells in spiral canal.
9. Too few nerve fibres in modiolus.
10. Atrophy or failure of auditory nerve.
11. Ankylosis of ossicles.
12. Obliteration of tympanic cavity by bony exostosis, mucus or connective tissue.
13. Formation of bone in tympanic cavity.
14. Vestibular windows filled with bone or connective tissue.
15. Formation of bone or connective tissue in aqueductus cochlea.
16. Atresia by bone or connective tissue of external canal.

III. Defects in the organs of taste, smell and touch are less clearly defined than those of sight and hearing, because doubtless of their less specialized constitution.

Each of these more generalized senses, however, appears to be affected with a diminution of sensitivity and in others with a hyper-sensitive functioning. In still others there appears to be a perversion of a lack of trueness in their functioning, however, and in what manner such variations are hereditary has not yet been made clear by pedigree studies.

Many individuals belonging personally to the socially unfit classes are not cacogenic because their conditions have been caused primarily

by extrinsic agencies rather than by innate heredity. Thus, with the blind, a large percentage—from 20 per cent. to 40 per cent.—are known to have lost their sight by the easily preventable *ophthalmia neonatorum*. Many individual persons legally counted insane are so, not because of heredity, but because of some extraordinary harshness of circumstance. It is known beyond dispute that many cases of mental defects and physical deformities are caused almost entirely by disease or injury to persons of sound constitution. Such cases should be charged largely to the fault of environment and not to that of heredity. There is much personal and social salvage in them, and a solicitous social order can well afford to lend them personal aid and to help them rear their families. Such individuals, although both personally and socially inadequate, are, because of the persistency of ancestral germ-plasm and the falsity of the doctrine of the transmission of acquired traits, not cacogenic, and for the purposes of this study are not, therefore, to be considered as proper subjects for eugenical segregation, much less for sterilization. Eugenics concerns only innate qualities. It is therefore the task, not of eugenics, but of education, preventive medicine, mental hygiene, sex hygiene, movements for the conservation of vision, for the prevention of industrial accidents, and for similar agencies to protect the members of society from socially inadequating forces, and for the medical and philanthropic sciences to treat individuals who, in spite of these preventative agencies, do fall the victim of crippling forces

CHAPTER III. SUGGESTED REMEDIES.

In a study of this sort it is proper carefully to consider each of the several different remedies which have been proposed or suggested or which appear as possibly efficacious for purging from the blood of the race the innately defective strains described in the previous chapter. The following list is a catalog of such agencies.

1. Life segregation (or segregation during the reproductive period).
2. Sterilization.
3. Restrictive marriage laws and customs.
4. Eugenical education of the public and of prospective marriage mates.

5. Systems of matings purporting to remove defective traits.
6. General environmental betterment.
7. Polygamy.
8. Euthanasia.
9. Neo-Malthusianism.
10. Laissez-faire.

Which of these remedies shall be applied? Shall one, two, or several or all be made to operate? What are the limitations and possibilities of each remedy? Shall one class of the socially unfit be treated with one remedy and another with a different one? Shall the specifically selected remedy be applied to the class or to the individual? What are the principles and limits of compromise between conservation and elimination in cases of individuals bearing a germ-plasm with a mixture of the determiners for both defective and sterling traits? What are the criteria for the identification of individuals bearing defective germ-plasm? What can be hoped from the application of some definite elimination program? What practical difficulties stand in the way? How can they be overcome? These and other questions arise. It is therefore, the purpose of this investigation to study in the light of first-hand knowledge these problems, and to present the results of its work to the public in order to aid in some degree society's efforts to work out a practicable program for effecting the desired ends. The following studies of this committee appear to justify the following attitudes respectively toward each of the several proposed or suggested remedies:

(1.) *Life segregation* (or segregation during the reproductive period).

This remedy must, in the opinion of the committee, be the principal agent used by society in cutting off its supply of defectives. Defectives must be, and with continually finer discrimination are being, segregated from the general mass of society; and it will require but little modification from the present custodial systems in effecting the eugenical end as well as protecting the immediate present-day society from the socially inadequate individual, and administering to the latter's most pressing needs.

(2.) *Sterilization*. Among the students of the eugenical status and movement of mankind there is a wide range of opinion as to the extremity to which society itself should go in applying sterilization, and concerning the part this remedy should play in relation to other remedial agencies. It would be possible theoretically to sterilize whole-

sale those individuals thought to carry defective hereditary traits, and thus at one fell stroke cut off practically all of the cacogenic varieties of the race. On the other hand, belief in the efficiency of natural selection under existing social conditions is held by some. Between these two extremes what effective and practicable working basis can be found?

In the program proposed by the committee *sterilization is advocated only as supporting the more important feature of segregation* when the latter agency fails to function eugenically. The relation between these two agencies is automatic, for it is proposed to sterilize only those individuals who, by due process of law, have been declared socially inadequate and have been committed to State custody, and are known to possess cacogenic potentialities. The committee has assumed that society must, at all hazards, protect its breeding stock, and it advocates sterilization only as supplementary to the segregation feature of the program, which is equally effective eugenically, and more effective socially.

(3) *Restrictive marriage laws and customs* will have but little effect upon the socially inadequate classes. This is amply demonstrated by Davenport in Bulletin Number Nine of the Eugenics Record Office: "State Laws Limiting Marriage Selection Examined in the Light of Eugenics." For persons of sound mind and morals, but suffering from severe hereditary handicap, these remedies will be efficacious; but individuals are given the designation "socially inadequate" because, among other reasons, they are not amenable to law and custom.

(4) *The eugenic education of the public and of prospective marriage mates* must become an active force in American social life, else no eugenics program looking ultimately toward cutting off the supply of defectives or favoring fortunate marriages and high fecundity among the favored classes can be carried out. Individuals possessed of a fine mentality and high moral sense are amenable to law and custom and, in a large measure, govern their conduct in consonance with the advance of scientific knowledge. The basis of progress is the growth and diffusion of knowledge. Faith in the development of the eugenics program is based upon faith in this principle.

For certain classes of individuals with hereditary defects, who withal are educable and are susceptible to social influences, eugenical education rather than compulsory segregation or sterilization appears to be the proper method for society to employ in cutting off their lines of descent. As an illustration of this the following is quoted from an

address delivered by Dr. Alexander Graham Bell to the deaf-mute members of the Literary Society of Kendall Green, Washington, D. C., March 6, 1891:

I think, however, that it is the duty of every good man and every good woman to remember that children follow marriage, and I am sure that there is no one among the deaf who desires to have his affliction handed down to his children. You all know that I have devoted considerable study and thought to the subject of the inheritance of deafness, and if you will put away prejudice out of your minds, and take up my researches relating to the deaf, you will find something that may be of value to you all.

We all know that some of the deaf have deaf children—not all, not even the majority—but some, a comparatively small number. In the vast majority of cases there are no deaf offspring, but in the remaining cases the proportion of offspring born deaf is very large, so large as to cause alarm to thoughtful minds. Will it not be of interest and importance to you to find out why these few have deaf offspring? It may not be of much importance to you to inquire whether by and by, in a hundred years or so, we may have a deaf variety of the human race. That is a matter of great interest to scientific men, but not of special value to you. What you want to know and what you are interested in is this: are you yourself liable to have deaf offspring? Now, one value in my researches that you will find is this: that you can gain information which will assure you that you may increase your liability to have deaf offspring or diminish it, according to the way in which you marry. * * *

He then quoted statistics which he had gathered at great expenditure of time and effort concerning the outcome of marriages among congenitally deaf persons, and continued:

Persons who are reported deaf from birth, as a class, exhibit a tendency to transmit the defect; and yet when we come to individual cases we cannot decide with absolute certainty that any one was born deaf. Some who are reported deaf from birth probably lost hearing in infancy; others reported deaf in infancy were probably born deaf. For educational purposes the distinction may be immaterial, but, in the study of inheritance, it makes all the difference in the world whether the deafness occurred before or after birth. Now, in my researches, I think I have found a surer and more safe guide for those cases that are liable to transmit the defect.

The new guide that I would give you is this: Look at the family rather than at the individual. You will find in certain families that one child is deaf and the rest hearing, the ancestors and other relatives also being free from deafness. This is what is known as a "sporadic" case of deafness—deafness which affects one only in a family. * * *

The statistics collated by me (Memoir, p. 25) indicate that 816 marriages of deaf-mutes produce 82 deaf children. In other words, every 100 marriages are productive of 10 deaf children. That is a result independent of the cause of deafness—an average of all cases considered. * * *

Now, the point that I would impress upon you all is the significance of family deafness. I would have you remember that all the members of a family in which there are a number of deaf-mutes have a liability to produce deaf offspring, the hearing members of the family as well as the deaf members.

This, I think, is the explanation of the curious fact that the congenitally deaf pupils of the Hartford Institution who married hearing persons had a larger percentage of deaf children than those who married deaf-mutes. It is probable that many of the hearing persons they married had brothers or sisters who were born deaf.

Of course, if you yourself were born deaf, or have deaf relatives, it is perfectly possible that in any event some of your children may be deaf.

Not only those concerned with the education and welfare of the deaf, but also the advisors and teachers of the blind are discouraging cacogenic marriages. Such at least is the testimony of Dr. Campbell, of the Ohio State School for the Blind.

That persons of even less than average intelligence are liable to bring unfortunately endowed children into the world is evidenced by the testimony given the committee by several men, five or six out of a total of thirty, who were cross-examined and who were sterilized in the Jeffersonville (Indiana) Reformatory.

They expressed their satisfaction with their sterile condition, and said in substance that they were glad that they would not curse the world with "criminal children."

The following extracts from letters written by intelligent persons demonstrates the fact that such persons are susceptible to eugenic education:

Letter number one:

I am an "albino," thirty-seven years old and single; the chief reason I am not married is I am unwilling to bring into existence another life to labor under the same disadvantages as I. I write this not in a grumbling, but simply a plain statement of a plain fact.

Letter number two:

My husband used to drink hard, and died of tuberculosis last October. Both his father and mother drink hard * * * and all of the family on his side drink. Now what I would like to know is, will my two children, a girl of 18 months and a boy of 5 years and 6 months, inherit their father's health and characteristics, or will they inherit my health, as I was the strongest both mentally and physically?

I would like to know, as it has often worried me when I think of my children; if they should be like their paternal grandmother and grandfather I am sure I would rather the Lord would take them now while they are both innocent children. * * *

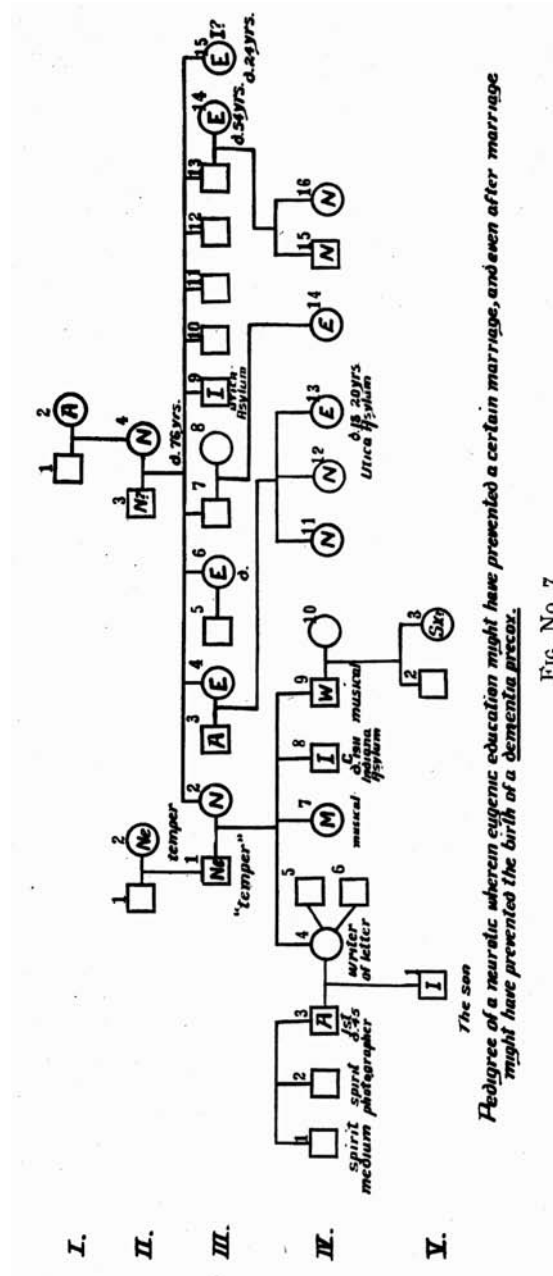
Letter number three:

The male's grandmother, on his father's side, died from heart disease, and the female's mother had a very serious case of valvular heart trouble, * * *

I should like to know as to whether heart diseases are inheritable or, if there is only a tendency, may this be effectually warded off?

I shall very sincerely appreciate reliable advice you can give me on this matter. Perhaps it may assist in securing a freer expression for me to state that the parties interested broke the engagement on account of the above considerations, the facts being not known when the engagement was (entered into).

The following extracts from a letter, and the pedigrees that it describes, are presented in order to illustrate the fact that many persons upon being educated as to their own and their prospective marriage mate's hereditary qualities, will, if hereditary defect be found, forego a contemplated marriage; or, if already married, will forego the privileges and comforts of parenthood if it be established that their offspring would be defective or degenerate.



Letter number four:

I am deeply interested in uncovering a family taint, which comes to me as a thunderbolt from a clear sky and which bids fair to wreck my own life in the possible permanent separation from my beloved son, a really brilliant youth of 22 years, a senior in the electrical engineering class at Armour Institute, to have graduated this past year, but who was compelled to leave school owing to a nervous breakdown. * * *

Dr. — made a diagnosis of dementia præcox in January last, but did not tell me what the diagnosis was. * * *

I find there is a deep-seated family taint, which I want to know is or is not responsible for the possible total annihilation of the only child I have—one I love better than my own life. My mother was the oldest of ten children, born near —, New York. She is living today a healthy, normal woman at 74. She had five brothers, whose children were apparently normal with the exception of one, whose daughter had a few epileptic seizures. —, one of the brothers, was insane for a short time, and confined in the — Asylum, but never had a recurrence of the attack. Of the girls in the family my mother was normal. The next had epileptic fits and was advised to marry young. She married a coarse, drunken farmer; had two normal daughters, so far as I know, and one who was an inmate of the — Insane Asylum, an epileptic until her death at 18 or 20 years. Mary, the next married, had epileptic fits, and died before middle age, had no children. — married, had a son and daughter normal, had epilepsy at 52 and lived but two years. The youngest was epileptic from birth, probably insane, died at about 24. My mother's mother was a normal woman, lived to be 76, I believe, her father likewise, although I shall find that out later; her grandmother lived to an extreme old age, and my mother tells me now she believes she drank constantly. I am anxious to go farther back than that, if I can find the way. My father was a high-strung, nervous man of violent temper, and describes his mother as having been the same. My father was a graduate of — College, — Theological, a minister, but his temper made life a hell on earth for us. My sister is 36, unmarried, a fine musician, pianist, but given to extreme sick headaches. My oldest brother was pronounced insane from birth, was whipped and punished by my father, and finally received a severe injury to the skull and brain in the coal mines at —, Indiana, was sent to the insane asylum at —, where he ran away some months later. As there were few asylums in Indiana at that time, they did not take the trouble to go after him, and his life from that time on was a series of commitments to workhouses, jails and penitentiaries, for petty offences, insane with criminal tendencies. A year ago he died from enlargement of the spleen. * * * My younger brother was well educated, a fine musician, married a young girl, had two children, left taking a position with a circus, and we have not located him for thirteen years. The boy, his son, 14 years, is described as being exceptionally clever and interested, but played truant, lies and steals, and is at present in the Boys' Reform School, at —, Indiana. The little girl, about 11, is wayward, hard to control, and I should describe her as sex offending, if not held with a firm hand. My boy's father was a drunkard, an easy-going, good-natured man, a steady drinker, had amassed a fortune of probably \$30,000. The whole family are queer—one brother a spirit medium, the other a spirit photographer. I know little of them. His father was 20 years older than myself, died of Bright's disease at 45. The boy is an only child, the father died when he was 14 months old. * * * My son was a brilliant student, a genius in fact, and would have made a name in the world. That he should be consigned to oblivion behind the walls of an insane asylum for the remainder of his life is a blow almost to great to bear. I want to find out whether he is punished for the sins of his ancestors in this rotten family. He did not smoke, drink, associate with lewd women, never had a venereal disease and did not practice masturbation. He had typhoid and scarlet fever, his sight was defective, born so. * * * If I could only assist you in establishing one little valuable item that would help us to understand why these fearful things have to be! If you would only help to educate the poor mothers and fathers of these neurotic children.

Letter number five:

I am referred to you with a problem of heredity in the case of epilepsy, and should appreciate being informed whether, in your judgment, the young man of whom I write should marry at all, and in case of marriage what are the probabilities of transmitting the disease. Inasmuch as I am the woman whom he wishes to marry, I wish to know as nearly absolutely as possible what the risk is. * * * Two physicians have told me that the danger of passing on the heritage of disease is too great—one a specialist in nervous diseases. * * * I should like to have it settled and to feel that my stand is taken in accordance with the best authority. *I am sorry my information is not more complete and detailed.* I have been told that the young boy who died in the home was very bad off, and a continual care all his life, requiring one person's constant attention. My physician in — said the disease never was stamped out in a family where it once existed, that it might skip one generation or two, but was sure to appear again.

Then follow extracts from a series of letters from the young man, giving quite extended and apparently frank descriptions of epilepsy in his own family.

Letter number six:

I have read in a number of magazine and newspapers articles of the work being done by you, and, if you can consistently consider the same, desire to present a personal case to you for consideration and advice.

At about the age of 12 years the writer suffered from a case of acute *Anterior Poliomyelitis*, the same affecting the lower limbs only, from the hip joints. After a period of some three or four months, during which time the limbs were in a completely paralyzed condition, the strength began to slowly return, and after a lapse of some eight to ten months was able to get about with a cane.

All this was some ten or twelve years ago, the writer at the present time being 24 years of age. He still uses a cane in walking, both lower limbs are somewhat undersized, the bones apparently not being fully developed and the muscles scanty, the right leg being a very small amount shorter than the left. The party is fitted for any kind of office work or other light occupation, which does not require manual labor or necessitates being on the feet all the time, but does not possess sufficient strength or agility to do manual labor or move about rapidly or very quickly.

The writer is one of a family of four children, three of whom are living, one having died of some kidney trouble recently, the remainder, excepting the writer, being in apparently normal condition. The parents are both living, aged about 55 years, both normal and healthy. The grandparents were all strong and healthy, both families raising a family of ten children, and living to the age of near 75 years, except maternal grandfather, who died of some fever when he was near 50 years of age. Great-grandparents were normal in all respects, as far as I can learn. The case referred to is the only one of *Anterior Poliomyelitis* known to occur in four generations referred to.

The information desired is this: Would the offspring of a union between the writer, constituted as covered in the former part of this communication, and a woman, to all appearances in a perfectly normal condition, and whose family record for three generations shows no cases of *Anterior Poliomyelitis*, be likely to develop this disease, or a tendency toward the same?

If you can give me any information along this line the same will be very much appreciated.

P. S.—As a matter of information, will add that since childhood, aside from the disease referred to, the writer has been in absolutely perfect health, the only difficulty being that of imperfect power of locomotion.

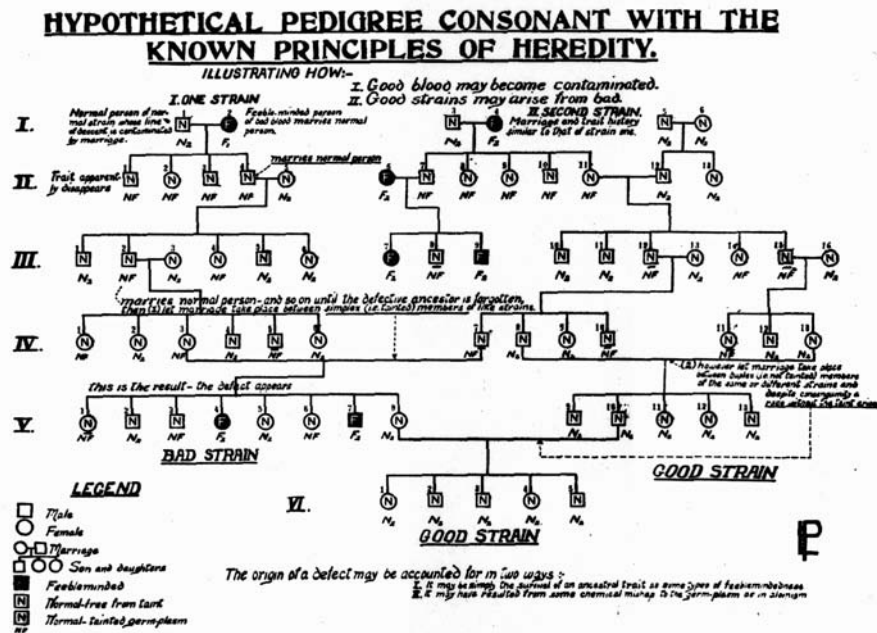
This letter is quite typical of those received from persons suffering not only from the so-called functional disorders, but also, as in this case, of persons suffering from the results of infectious diseases wherein the exciting cause is not hereditary and the factor of heredity in the predisposing causes cannot in the present state of knowledge be accurately measured. Such mental attitudes are eugenically wholesome. With the growth and diffusion of knowledge concerning human heredity a national eugenic conscience will develop. Eugenics should not—and could not often, if it would—prevent lovers from marrying; but early eugenical training will in a measure regulate “falling in love.”

If an individual whose personality, or whose family, is weak or defective in reference to a particular trait, marries, he should for his own and his descendants' sake, seek a mate who is strong and whose family is strong, wherein he and his family are weak. If, however, it is the good of the race that is at stake, such a person possessing a very serious or handicapping hereditary defect may well not marry at all; and the person of high talent in one direction would seek—other things being equal—a consort from a family characterized by distinction in the same direction. Specialization in human, no less than in plant and animal, strains would result in greatly increased efficiency.

Society must at all costs encourage an increased fecundity of the socially fit classes and must cut off the inheritance of individuals suffering from hereditary defects, which seriously handicap their fitting into the social fabric. It, therefore, behooves the American people to educate along eugenical lines, not only the more sterling classes, to the end that they may make fortunate matings, but also those individuals with educable minds, who suffer from serious hereditary defects, to the end that they will voluntarily decline to increase their kind. These letters just quoted indicate that hereditary traits influence mate selection among persons knowing the manner of the inheritance of specific traits. With intelligent people, then, eugenical marriage appears to be largely a matter of education. In individual cases, wherein this remedy fails, segregation or sterilization should be resorted to as a supporting measure. It may be fitting again to call attention to the eugenic value of the policy of resorting to segregation or sterilization in all cacogenic cases wherein it is apparent that preventive agencies have failed or will fail. If sterilization is opposed, let its opponents bestir themselves and make efficacious other remedies.

(5) *Systems of matings purporting to remove defective traits.* Although it is known that defective traits of the recessive type will

disappear somatically, in subsequent matings, so long as matings with normal individuals of pure strains are made, still in such families there is always a likelihood that a simplex (*i. e.*, a tainted germ-plasm, but normal personality) individual will mate with another person similarly descended. For the sake of brevity and conciseness, the accompanying hypothetical pedigree, rather than a series of actual histories, is given in order to illustrate what happens in such cases:



Hence the selection of certain potential parents, and the elimination of others, is the only basis of a possible effective eugenics program of any sort. It, therefore, behooves society to set in operation selective forces which can control mate selection in a practicable manner consonant with the highest moral and social ideals.

(6) *General environmental betterment.* It is held by some schools of social workers that better schools, better churches, better food, better clothing, better living, and better social life will remedy almost any social inadequacy in individuals. The studies of this committee point strongly in the opposite direction. They prove conclusively that much social inadequacy is of a deep-seated biological nature, and can be

remedied only by cutting off the human strains that produce it. Heredity and environment work hand in hand; rarely do they pull oppositely. As a rule, a good ancestral germ-plasm will furnish a good environment for the offspring and a bad ancestral germ-plasm will add to the degenerate hereditary gifts of its offspring a poor environment. Eugenics and eugenics each have their tasks to perform. Neither can perform the whole work required in advancing the social condition of mankind.

(7) *Polygamy*. In animal breeding polygamy or the "pure sire method" has been one of the most potent agencies in rapid advancement and, could the essential biological principles of polygamy be applied to mankind, we should expect these same biological values to accrue. An eugenical program that advocates polygamy must be doomed to failure because it strikes at one of our most priceless heritages so laboriously wrought through centuries of moral struggle. It would be buying a biological benefit at vastly too great a moral cost. A eugenics program to be effective must and can be based upon an enhanced sense of monogamy, and of the sacredness of love and marital fidelity. If any serious students of the modern eugenical studies advocate polygamy, it is unknown to the members of this investigating committee, although many uninformed critics of the eugenics program unhesitatingly complain that eugenics proposes "to apply the methods of the stud farm to mankind."

(8) *Euthanasia*. The ancient Spartans were a race of fighters. The business of the Spartan mothers was to grow soldiers for the State, and Spartan social life and customs appear to have been well directed toward this end. However much we deprecate Spartan ideals and her means of advancing them, we must admire her courage in so rigorously applying so practical a system of selection. According to history and tradition, Spartan officials exposed to the elements children who promised unfitness as adults for effective hand to hand combat. Sparta produced soldiers and she consumed them, and left but little besides tales of personal valor to enhance the world's culture. With euthanasia, as in the case of polygamy, an effective eugenical agency would be purchased at altogether too dear a moral price. Any individual once born should, in the opinion of the committee, be given every opportunity and aid for developing into a decent adulthood of maximum usefulness and happiness. Preventing the procreation of defectives rather than destroying them before birth, or in infancy, or in the later periods of life, must be the aim of modern eugenics.

(9) *Neo-Malthusianism*, or the purposeful limitation of the number of offspring, is a problem for the constructive side of the eugenics program to cope with, rather than an important factor for society to consider in its efforts to cut off the supply of defectives, for defectives of the lower types do not greatly limit sex indulgence by the fear of having children, nor do they resort to artificial means to prevent conception. Hence this remedy does not apply to them. Above this class there is doubtless another class of potential parents of all grades of mentality, and of all grades of social and financial standing who resort to artificial means to prevent conception. With such classes selfishness is a ruling motive, but doubtless in many such cases the determining factors are traceable to current social influences, and as such should be combatted. In a letter dated January 14, 1913, to this committee, Theodore Roosevelt says:

As you say, it is obvious that if in the future racial qualities are to be improved, the improving must be wrought mainly by favoring the fecundity of the worthy type and frowning on the fecundity of the unworthy types. At present we do just the reverse. There is no check to fecundity of those who are subnormal, both intellectually and morally, while the provident and thrifty tend to develop a cold selfishness, which makes them refuse to breed at all.

It is not an impossible conception to think of a future social status wherein selection for parenthood will be not held a natural right of every individual; but will be a prize highly sought by and allotted to only the best individuals of proven blood, and those individuals who are not deemed worthy and are by society denied the right to perpetuate their own traits in subsequent generations, will be held in pity by their fellows. In pointing out the possible ways of accomplishing it, and in perfecting the practical methods for its execution, the achievement of this ideal is, to speak briefly, the task of the eugenics program for the long indefinite future.

The choice between large and small families for provident parents of good innate traits will be made instantly in favor of large families by all eugenists, just as the same eugenists will insist that defective parents must be estopped from having any children at all. The committee feels constrained to condemn in no uncertain terms the purposeful limiting of offspring of parents of worthy hereditary qualities.

(10) *Laissez-faire*. It is held in many quarters that a rational eugenics program is impossible, or, at best, that eugenic efforts are unnecessary, for, during the ages mankind appears to have improved and advanced without such a program. In reply, let it be said that

modern social conditions have themselves in a large measure brought on the problems that face us; and it behooves society to bestir itself to solve them. Natural selection would continue to cut off the individual blood lines grossly unadapted to modern conditions if it were permitted to operate. It is the bolstering up of the defective classes by a beneficent society that constitutes the real menace to our blood, because it lowers the basis of parenthood. Usually nature does not long maintain an unused function. If she gave mankind reason and understanding, and such reason and understanding are not used for promoting their own conservation, then such faculties are apt to be discarded in the ruthlessness of natural selection. In this case the means would consist in disseminating defective traits among the general population, and such deterioration would continue until society itself would no longer be able to bolster up the defectives. Then fortunate combination of traits and natural selection would again operate, and in the long cycle a few worthy strains of mankind would again rise. There must be selection not only for progress, but even for maintaining the present standard. To the degree we inhibit natural selection, we must substitute rational selection, else our blood will deteriorate.

The marvelous rise of plants and animals under domestication—accomplishing in a few years results that in nature might never have been wrought, or if wrought would have consumed many times the length of time found sufficient by man—has been due to man's applying a rational method in selecting parents. A similar possibility for the rise of the innate specialized qualities of the human stock is within the grasp of society; but like all great prizes it must be fought for and purchased at the price of great effort.

SUMMARY

Human society needs to avail itself of every possible means for its own advancement. Quite naturally, these means fall into two classes—(1) those pertaining to improving the condition of individuals already born; (2) those concerning the improvement of the innate qualities of future generations. The latter means is the concern of the science of eugenics, and eugenics in turn works quite naturally along two channels—(1) concerning the increased fecundity and fortunate matings of the better classes; (2) concerning the cutting off of the supply of defectives. Eugenics is at best a long-time investment, and will appeal only to far-sighted patriots. Like all other long-time investments, the

earlier and the greater the primary investment, in accordance with the familiar principle of geometrical progression, the vastly greater the end result. This particular investigation aims to fit into the general scheme of social betterment by attempting to point out a practicable means for accomplishing the cutting off of the supply of innate social misfits. It thus purports to be only one of several agencies of social advancement. It is the duty of human society to grasp every possible means for its amelioration, and, if it finds in the segregation and sterilization of defectives a means for improving the innate qualities of future generations without inflicting a present moral wound, it is the duty of society even at great cost and effort to bestir itself in applying such remedy. This investigation points very strongly to the fact that with all of the upbolstering influences of modern humanitarianism, natural forces no longer suffice to select only the fittest for the human breeding stock. We contend that the perpetuity of our civilization depends primarily upon the conservation of the best inborn traits of our citizens; and that a social order finding a key to the conservation of its best units—and failing to use it, is remiss in its social duty and will suffer racial deterioration. A successful society must at all hazards protect its breeding stock, and since, under modern conditions, a vigorous program of segregation supported by sterilization seems to present the only practicable means for accomplishing such end, a progressive social order must in sheer self-preservation accept it.

By the time a consistent elimination program has been in operation for two generations, the lines of descent of lowest levels of the American population will have been cut off, and during this time the institutions can be made more and more self-supporting, due continually to receiving a higher class of inmates and to administrative reform, and experience in practical self-maintenance. Gradually these institutions can be transformed into industrial schools, and can be used perpetually for educating, training and segregating the more unfortunate, and the least gifted members of the population. There will always be insane, feeble-minded and deformed individuals; but they need not constitute so large a proportion of our total population, nor need they contaminate our more worthy families. If the history of human civilization and of plant and animal breeding have taught us anything they have taught us clearly that the human race is capable of vast improvement by rational selection of parents. And this can be done without sacrificing one whit our ideals of love and fidelity. Hand in hand with the work-

ing out of the eugenical program will come an increased and enhanced feeling of the sanctity of life and of parenthood.

This program for cutting off the lower levels of the human breeding stock is only a part of the general eugenics program, which must include also the positive side, namely, that of encouraging increased fecundity and fortunate matings among the better classes. Indeed, as time goes by, the business of eugenics will tend more and more toward this positive side, aristogenics, it is sometimes called. The program as outlined by the committee calls for a task that will require two generations for the completion of its first stage. No matter to what extent laws may be passed, unless the eugenics program becomes a part of the American civic religion, the financial support necessary to put it into execution cannot be secured from the several legislatures. Nor, without such general feeling, will it be possible even with abundant money to effectively execute a program.

If America is to escape the doom of nations generally, it must breed good Americans. The fall of every nation in history has been due to many causes, but always chiefest among these causes has been the decline of the national stock. Nations must change, but they need not of necessity die out. A quickened eugenics conscience is one of the prerequisites necessary to the working out of a successful eugenics program. Eugenics must be diffused through our religious and moral codes. It must be taught throughout our national educational system. It must be the subject of continued research.

Along with eugenical advance will come social and moral advancement, for, if not, why should we try to breed better persons? The more moral society will foster the eugenics ideal, and the eugenics program will in turn produce people susceptible of a higher social and moral development.

To epitomize—of the several remedies reviewed *segregation and sterilization* are the ones deemed by this committee to be most feasible and effective in cutting off from the human population the supply of defectives. *Restrictive marriage laws and customs, eugenic education of the public, of prospective marriage consorts, and in youth of potential parents, and general environmental betterment* are all eugenic agencies of great value. In this particular problem, however, they rank greatly below segregation and sterilization, although in other social programs they are of prime importance. We condemn *Neo-Malthusianism* because in it we fail to find an agency able to cut off the supply of defectives, but, on the other hand, we find it fraught with great danger,

in that it is more apt to strike at fecundity in our better classes than among degenerates. Systems of matings purporting to remove defective traits, polygamy, euthanasia, and laissez-faire, are condemned unreservedly.

In the subsequent reports of the studies of this committee, we propose, by the means of first-hand facts, a considerable body of which has already been secured and studied, to present to the public data for weighing the several problems that appertain to this investigation.

CHAPTER IV.

SUMMARY OF THE PRELIMINARY STUDIES.

In the preliminary studies of this committee facts concerning each of the several related aspects of the problem, enumerated in the preface of this study, have been and are still being collected. These studies appear amply to justify the commendation to the American people of the following program, which, if consistently followed by all of the states and the general government, will, we believe, in two generations largely but not entirely eliminate from the race the source of supply of the great anti-social human varieties which now (1913) constitute approximately 10 per cent. of the total population:

1. That, in case sterilization is limited to the inmates of institutions, the American state institutions for the segregation and treatment of the anti-social classes continue to receive public support enabling them for at least two generations to increase their capacity for inmates at a ratio differential in reference to the increase of the total population, equal at least to one-half such differential growth of such institutions, taken as a whole, during the two decades 1890-1900. Such increase requires that by 1980 the custodial institutions of the country must be able to care for 1,500 persons per 100,000 population.

2. That the present apparent tendency of society to commit to institutions the socially inadequate at an early age and for a less extreme type be encouraged in order (a) to insure the segregation of the varieties sought to eliminate before the beginning of, or as early as possible in, the reproductive period, and (b) that the earlier treatment and training may the more surely and safely restore such individuals to society.

3. That the segregation program be supported by a sterilization program as follows: That during the period while under State custody every inmate (except those committed for life) of an institution main-

tained in whole or in part by the public funds be examined as to innate personal traits and family pedigree, and that all such inmates found to be potential parents with undesirable hereditary potentialities and not likely to be governed by the highest moral purpose shall be humanely sterilized prior to release from their respective custodians. Such a supplementary sterilization program will call for surgical sterilization of inmates prior to their release from institutions as follows: beginning with approximately 80 persons per year per 100,000 total population in 1915 and increasing to approximately 150 persons per year per 100,000 total population in 1980.

4. Attention is called to the fact that the relation between the segregation feature and the sterilization feature of the program herewith proposed is automatic. If for humanitarian, social or other reasons, objection is made to sterilization, let society keep the potential parent with dangerous hereditary qualities segregated during the reproductive period; if the objection to sterilization can be overcome, then convalescent inmates or persons having served their allotted commitments in institutions, though they be potential parents with dangerous hereditary qualities, can be first sterilized and then from a eugenical—but not necessarily from a social—point of view safely be returned to society. The committee feels that the proposed model sterilization law (Chapter VIII, Bulletin 10 B) provides amply for safeguarding the rights of the individual, for conserving humanitarian principles and at the same time for protecting society against the deterioration of the innate qualities of its members.

5. From a moral, social, and religious, as well as from a biological and legal point of view, the program of segregation and sterilization is, the committee feels, justified because

- (a) It appears to be the duty of society to foster by all possible means the innate, as well as the acquired physical, mental and moral well-being of the race, and this program promises the promotion of such an end.
- (b) It proposes to sterilize and thus cut off the lines of descent only of persons amply demonstrated in each particular case to be unable to understand, or, if understanding, morally unable to inhibit or control himself or herself in a manner preventing the continuance of his or her unworthy traits. To permit such individuals to reproduce their kind is neither merciful nor just.

- (c) The consent of the inmate (or his guardians) to the necessary operation can often be secured, thus relieving the State from imposing upon an individual, even though he be defective or insane, who may, because of such operation, bear some resentment against society. When possible such consent should be secured, but if such consent cannot be secured then the operation must proceed, for the protection of society must outweigh the desires or privileges of an anti-social individual.
- (d) There is evidence to show that sex immorality is not encouraged or increased as a result of the sterilization of those manifestly unfit for parenthood. Our investigations indicate that such persons seldom are deterred from immoral practices by any consideration which sterilization would remove, nor does the sterilization of degenerates appear further to break down the modicum of self-respect and control that normally belong to such individuals.

6. It is felt that the sterilization law proposed by the committee will stand the test of constitutionality by the courts. The purely punitive sterilization law of the State of Washington was recently held by the Supreme Court of that state to be neither "cruel nor unusual." A purely eugenical law, expertly drawn and operating humanely and applicable only to individuals who by due process of law and by scientific investigation are demonstrated to be social menaces of the gravest character, would probably be found constitutional in any of the several States.

7. The Federal Government should exercise the same care in preventing the landing of inferior human breeding stock that the State governments should take in eliminating the inferior varieties from the stock already settled here. It should also apply eugenic principles in the administration of its several institutions for criminals and insane.

8. That the segregation and sterilization feature of the proposed program be further supported by legislation and by education applicable to persons with physical disabilities (such as hereditary blindness, deafness, deformity, constitutional weakness, and predisposition to specific diseases), but still possessed of normal mind and subject to social influence and amenable to law. If the defect be an extreme sort, such persons should be deterred from parenthood by eugenical education during their youth. Such education should be supported by laws and customs limiting or prohibiting their marriage. With some in-

dividuals of these classes sterilization by consent may be desirable. If these remedies fail with any particular group of the physically inadequate, then such group of individuals should be classed as socially inadequate and as such should be subjected to the legal segregation and sterilization features of this program.

9. Due continually to receiving a higher grade of inmates and to extending the colonization and industrial systems for better treatment and partial self-maintenance of inmates, it is probable that the necessary increased institution capacity demanded by the recommended program can be provided for without greatly increasing the expense burden in relation to the total state budgets and to the per capita expense to the total population. With institutional growth will come a greater demand for trained physicians, eugenists and administrators with a consequent increased skill in diagnosis and treatment and in determining the hereditary qualities and innate traits of the inmates, all of which will tend to accelerate the attainment of the desired ends.

10. Sterilization of a male by vasectomy skillfully executed is a simple, safe, and effective method for preventing procreation by him without otherwise greatly disturbing his physiological, mental or social economy. By skillful surgical technique and sometimes—though very rarely—by natural processes the vas may be re-anastomosed and the procreatory functions thereby restored. Castration therefore appears to be the only absolutely sure method of sterilizing males, but when young boys are thus operated upon it appears also to inhibit the development of their secondary sexual characteristics as well as to destroy the procreatory functions. Castration of adult males seems to be unaccompanied by any great physiological change other than sterilization. For general eugenic purposes, vasectomy carefully executed is considered sufficiently certain to insure effective sterilization. It is recommended as the best general method where it is considered desirable to sterilize cacogenic males; to be supplanted by other operations only for additional medical or social reasons.

11. The sterilization of the female—whether ovariectomy, salpingectomy, or hysterectomy—is a more serious matter. However, modern surgery and hospital care have greatly reduced the danger of such operations. Salpingectomy and hysterectomy successfully executed have but little physiological effect other than the effective sterilization of females of any age, nor does ovariectomy often have any apparent untoward effects upon adult women. Rare cases of women regenerating ovaries—which were thought to have been entirely removed—and bear-

ing children have been reported. In any effective sterilization program, defective females will have to be sterilized in fair proportion to the number of males thus operated upon, else a substantial reduction in the anti-social strains of our population will be greatly retarded.

12. In some individual cases of sterilization, a therapeutic value, and in others—though quite rarely—an injury, appears to have been wrought. Oftentimes the inmates of institutions are sterilized for purely therapeutic reasons. The committee feels that the application of eugenical sterilization should in no way interfere with such practice. If, incidental to such an operation, a defective line of inheritance is cut off, a eugenic end is also accomplished. Nor should there be any law forbidding in private practice the surgical operation of sterilization for eugenical reasons upon persons at their own or their families' request. In general the same laws that govern criminal surgery and malpractice should govern a possible abuse of these operations.

13. By the consistent application of the segregation, sterilization, and education program herewith reported the American people can in two generations largely purge their blood of the great mass of innately defective traits from which they now suffer.

For the negative side or the cutting off of defectives, it would appear to be a good policy continually to attack in the manner described in Chapter IX of study No. II, the descent lines of the lowest one-tenth of our population. Continuous decimal elimination should become a part of the eugenics creed of civilized people.

The future efforts of this committee will be directed toward extending, evaluating, analyzing, and interpreting the data now being accumulated; and reporting the results of its investigations in a series of studies—one on each of the several aspects of the problem enumerated and individually outlined in the introduction of this preliminary survey.

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