

U.S. Scientists' Role in the Eugenics Movement (1907–1939): A Contemporary Biologist's Perspective

Steven A. Farber

IN THIS SPECIAL ISSUE devoted to the study of pigmentation, it is only fitting that we reflect on how this trait has been utilized to promote specific political and social agendas in both the United States and Europe. It was Francis Galton, a cousin of Darwin, who coined the term “eugenics” in 1883 while advocating that society should promote the marriage of what he felt were the fittest individuals by providing monetary incentives.¹ Shortly thereafter, many intellectuals and political leaders (e.g., Alexander Graham Bell, Winston Churchill, John Maynard Keynes, and Woodrow Wilson) accepted the notion that modern societies, as a matter of policy, should promote the improvement of the human race through various forms of governmental intervention. While initially this desire was manifested as the promotion of selective breeding, it ultimately contributed to the intellectual underpinnings of state-sponsored discrimination, forced sterilization, and genocide.

From the perspective of an academic in 2008, it can be hard to fathom how pioneering studies of chromosomal segregation would be juxtaposed to studies of “Pedigrees of Pauper Stocks” in England, “Individual and Racial Inheritance of Musical Traits” or “Heritable Factors in Human Fitness and Their Social Control.” These examples come from the 1923 report of the Second International Congress of Eugenics, titled *Eugenics, Genetics, and the Family*.² In the opening address, Henry F. Osborn, then president of the American Museum of Natural History in New York (the site of the meeting), stated,

In the US we are slowly waking to the consciousness that education and environment do not fundamentally alter racial values. We are engaged in a serious struggle to maintain our historic republican institutions through barring the entrance of those unfit to share in the duties and responsibilities of our well-founded government. . . . In the matter of racial virtues, my opinion is that from biological principles there is little promise in the melting-pot theory. Put three races together (Caucasian, Mongolian, and the Negroid) you are likely to unite the vices of all three as the virtues. . . . For the worlds work give me a pure-blooded. . . ascertain through observation and experiment what each race is best fitted to accomplish. . . . If the Negro fails in government, he may become a fine agriculturist or a fine mechanic. . . . The right of the state to safeguard the

character and integrity of the race or races on which its future depends is, to my mind, as incontestable as the right of the state to safeguard the health and morals of its peoples.

It is important to appreciate that within the U.S. and European scientific communities these ideas were not fringe but widely held and taught in universities. The report of the Eugenics meeting was the lead story in the journal *Science* on October 7, 1921, and this opening address was published, in its entirety, beginning on the first page of the issue.³

To understand why eugenics became a serious scientific movement in the 1920s, it is useful to look back 20 years earlier. In 1902, Charles B. Davenport, then a Professor of Zoology at the University of Chicago, approached the Carnegie Institution with a request for \$45,000 to create a “Biological Experiment Station for the study of evolution” on the Cold Spring Harbor Campus.⁴ His aim would be the “analytic and experimental study of the causes of specific differentiation—of race change.” He proposed to accomplish this “by the cross breeding of animals and plants to find the laws of commingling of qualities . . . the study of the laws and limits of inheritance.”⁴ Within this brief two-page proposal, Davenport commingles the scientific genetic approach that dated back to Mendel with his personal fascination with the perceived human racial differences of his day.

Within 5 years the Experimental Evolution Department had established over 100 animal stocks that included 20 mammals and dozens of insects (including crickets and *Drosophila*), and over 400 flowering plants.⁵ It took until 1910 for Davenport to begin studies on human inheritance with the creation of the Eugenics Record Office. Financial support came from Mrs. E.H. Harriman (a wealthy philanthropist), John Harvey Kellogg (the breakfast cereal magnate), and the American Breeders' Association. This association was the first membership-based group whose mission included the promotion of eugenics research in the United States through a subcommittee chaired by ichthyologist and Stanford University President David Starr Jordan.^{6,7} By 1918, H.H. Laughlin was hired as the superintendent of the Eugenics Records Office, which transitioned from a freestanding, self-supporting endeavor to a sub-department of the Experimental Evolution Department under the control of the Carnegie Institution.⁸ Davenport conceived of this office to mainly “serve eugenical

interests in the capacity of repository and clearing house" and to "provide data adequate to making eugenical studies."⁸ Their method was to collect family histories from "better families" and "subnormal families" based upon methods previously described by Galton.

By the 1920s, three major efforts pushed the eugenic agenda in the United States and subsequently throughout Europe: (1) The Eugenics Research Association with Laughlin and Davenport as leaders and in affiliation with the American Association of the Advancement of Science (AAAS). (2) The American Eugenics Society founded by Laughlin, Harry Crampton, Madison Grant, and Henry Fairfield Osborn with the purpose of promoting the eugenical movement at both the scientific and popular level. (3) The Eugenics Records Office, directed by Davenport and run by Laughlin with the express purpose of providing the scientific data to support the eugenics movement.

A concerted effort of this magnitude with the expressed support of the mainstream scientific establishment (e.g., AAAS as operator of the journal *Science*; the American Breeders' Association, which later became the American Genetics Association; and the Carnegie Institution) had an effect throughout both the scientific and governmental establishments worldwide. Specifically, by 1936 when both England and the U.S. genetic scientific communities finally condemned eugenical sterilization, over 60,000 forced sterilizations were already performed in the United States on mostly poor (and often African-American) people confined to mental hospitals.^{9,10} The practice of forced sterilizations for the "unfit" was almost unanimously supported by eugenicists. The American Eugenics Society had hoped, in time, to sterilize one-tenth of the U.S. population, or millions of Americans.¹¹

Laughlin's publication of *Eugenical Sterilization in the United States* in 1922 included the drafting of a "model law" for compulsory sterilization that was the bedrock of forced sterilization programs throughout the country. According to Davenport, Laughlin's "book on sterilization is recognized as the standard."¹² In 1930, Laughlin comments about the U.S. Supreme Court upholding a Virginia sterilization statute as, "the establishment of the eugenical authority of the state... [enabling] the prevention of hereditary degeneration by a method sound from the legal, eugenical and humanitarian points of view... It is now possible for any state, if it desires to do so, to enact a sterilization statute."¹² A typical study prepared by Laughlin and used to justify these laws is excerpted below:

The Problem of the Feeble-Minded in Connecticut... the 11,962 feeble-minded persons—the total number who came under the purview of the Survey—have been studied individually in reference to nine subject as follows: (1) sex, (2) age, (3) recidivism, (4) diagnostic class, (5) intelligence quotient, (6) race descent, (7) nativity, (8) citizenship, (9) kin in institutions... At the present rate every inhabitant of Connecticut is expending... 5 and 1/3 as many dollars on the socially inadequate and the individually handicapped as the average inhabitant was spending for the same purpose 20 years ago.¹³

Davenport's eugenical research is very typical of countless studies purporting to link perceived human differences to the burgeoning field of Genetics. This work is best appreciated by quoting the author directly:

Successful naval officers are of various types... The three commonist traits are: (1) love of sea; (2) capacity for fighting; (3) capacity for commanding or administering... The performance of a man depends in large degree upon his inherent, inheritable traits... The sea makes to different people varied appeal... The love of the sea, sea-lust or thalassophilia is apparently a specific trait to be differentiated from wanderlust or love of adventure... One of the most striking characteristics of sea-lust is that it is wholly a male character... so the appeal of the sea develops under the secretion of the germ gland in the boy. It is theoretically possible that some mothers are heterozygous for love of the sea, so that when married to a thalassophilic man half of their children will show sea-lust and half will not.¹⁴

What is often not appreciated is that Nazi efforts were bolstered by the published works of the American eugenics movement as the intellectual underpinnings for its social policies. One of Hitler's first acts after gaining control of the German government was the passage of the Law for the Prevention of Hereditarily Diseased Offspring (*Gesetz zur Verhütung erbkranken Nachwuchses*) in July 1933.¹⁵ The Nazis, when proposing their own sterilization program, specifically noted the "success of sterilization laws in California" documented most notably by the American eugenicist P.B. Popenoe.¹⁶ The Nazi program ultimately resulted in the sterilization of 360,000–375,000 persons.⁹ The intellectual linkage between the United States and Nazi eugenic programs is further illustrated by Davenport's presence on the editorial boards of two influential German racial hygiene journals, *Zeitschrift für Rassenkunde und ihrer Nachbargebiete* and the *Zeitschrift für menschliche Vererbungs- und Konstitutionslehre*.¹⁷ Sadly, with the benefit of 70 years hindsight, we can see the alignment of the stated goals of the Eugenics Records Office with Nazi social engineering programs as revealed by Davenport:

To investigate the nature of those forces or agencies which improve or impair racial or family-stock qualities. These forces which act upon immigration, mate selection and fertility, differential by race and family-stock quality are those which have been given most attention. In the field of immigration, studies have been made in Europe and America on the selection of immigrants have played as recruits to the breeding stock of the American people. Many of these researches were conducted in collaboration with the Committee on Immigration and Naturalization of the House of Rep. and the Immigration Service of the U.S. Government.¹⁸

It wasn't until 1935 that a review panel convened by the Carnegie Institution concluded that the Eugenics Research Office research did not have scientific merit, and subsequently withdrew funding in 1939.¹⁹ In examining this dark history of American science, it is equally important to appreciate that eugenics was but a small part the work of the Carnegie. The Department that Davenport created, which under his tenure later became the Genetics Department in 1920, was not focused on eugenics. In fact, often eugenics-related work represented less than 1 page in what was typically a 30-page summary of the department's yearly activities. This was a department that went on to support the efforts of Thomas

Hunt Morgan (genes are carried on chromosomes, for which he was awarded the Nobel Prize in 1933), Alfred Hershey and Martha Chase (DNA as genetic material), A.H. Sturtevant (first genetic chromosomal map, 1 map unit = 1% frequency of recombination), and Barbara McClintock (transposons, for which she received the 1983 Nobel Prize).

In this special Pigmentation Issue, and on the eve of the election of our first President of European/African ancestry, it is useful to revisit the history of the eugenics movement to recognize the contributions of the scientists who have eliminated it from today's scientific life and analyze and learn from our mistakes.

In 1925, T.H. Morgan clearly identifies an important criticism of the eugenics movement. He directly attacks Davenport's and Laughlin's approach (without mentioning their names) by pointing out that despite all their exhaustive family pedigrees, they failed to really understand the nature of the trait they thought they were studying.

In the case of man's physical defects, there are a few extremely abnormal conditions where the evidence indicates that something is inherited, but even here there is much that is obscure. The case most often quoted is feeble-mindedness that has been said to be inherited as a Mendelian recessive, but until some more satisfactory definition can be given as to where feeble-mindedness begins and ends, and until it has been determined how many and what internal physical defects may produce a general condition of this sort, and until it has been determined to what extent feeble-mindedness is due to syphilis, it is extravagant to pretend to claim there is a single Mendelian factor for this condition... until all the social conditions surrounding the childhood of the individual are examined and given proper weight, serious doubts will arise as to what form of inheritances is producing the results.²⁰

Some have argued that the lesson of this period was that:

Genetics was corrupted in the 1920s by the confusion of folk knowledge with scientific inference. For whatever reasons, outsiders who recognized it were shunned, and insiders were, as they say, a day late and a dollar short. The fairly obvious lesson to be learned is that where science appears to validate folk beliefs, it needs to be subjected to considerably higher standards of scrutiny than ordinary science.²¹

We may want to ask ourselves: What (if anything) that we research today will seem as unfathomable as the sex-linked trait, love of the sea?

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Address reprint requests to:
 Steven A. Farber, Ph.D.
 Department of Embryology
 Carnegie Institution for Science
 3520 San Martin Drive
 Baltimore, MD 21218

E-mail: farber@ciwemb.edu

