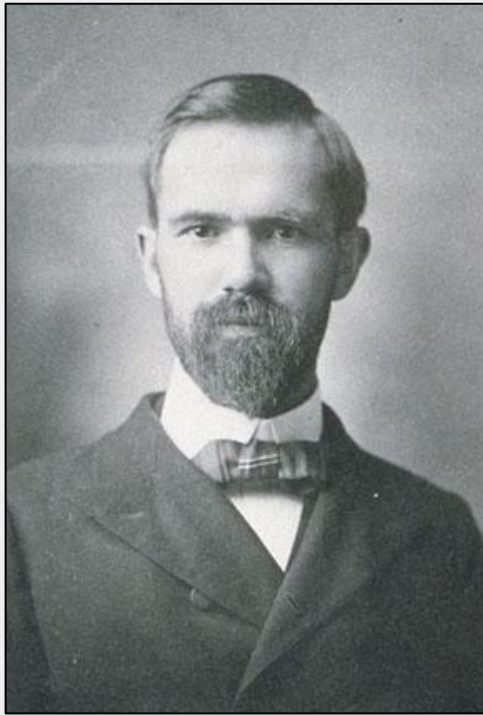


Figure 15

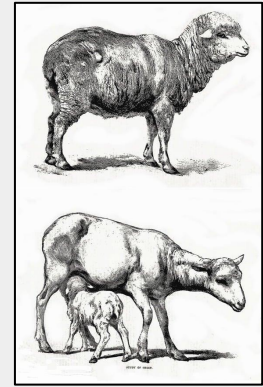
# Charles Davenport & the Prospects of Genetics



Meet Charles Davenport — a respected and enterprising biologist, described in a 1907 newspaper article as a "man of mystery," who hopes to decipher "the destiny of man" by studying the genetics of hens, cats, rabbits and guinea pigs.

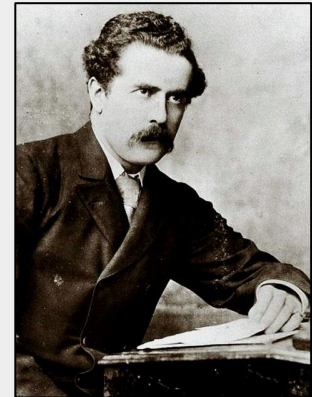


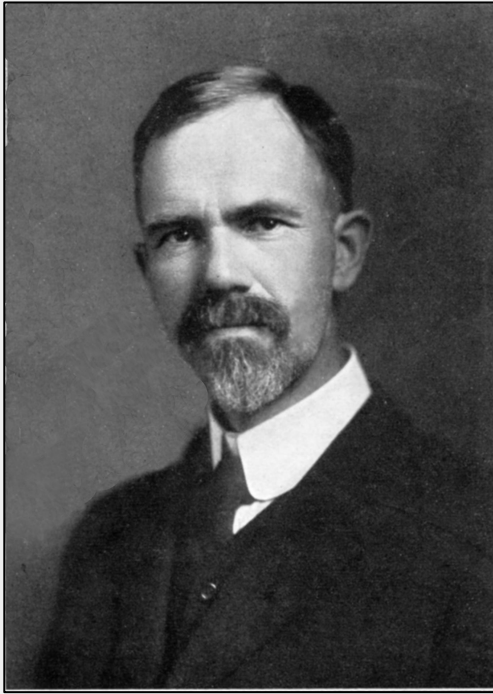
Farmers have long known that you can improve crop plants or animals through selective breeding.



Mendel's work on pea plants, rediscovered in 1900, seems to offer new prospects for research.

In 1911 Archibald Garrod shows that certain inborn errors of metabolism in humans follow a Mendelian pattern of inheritance.





Davenport (among others) wants to apply that genetic knowledge to humans, with a vision of improving society.

They call it *eugenics*, meaning "good origins."

In 1910 Davenport becomes Director of a newly instituted Eugenics Record Office.





Davenport leads research on the genetics of many human conditions.

For example, in 1916, scientists debate whether the disease pellagra, prevalent in the poor rural South of the U.S., is caused by infection or an inadequate diet.

Davenport says it is neither(!). He contends it is *hereditary*.

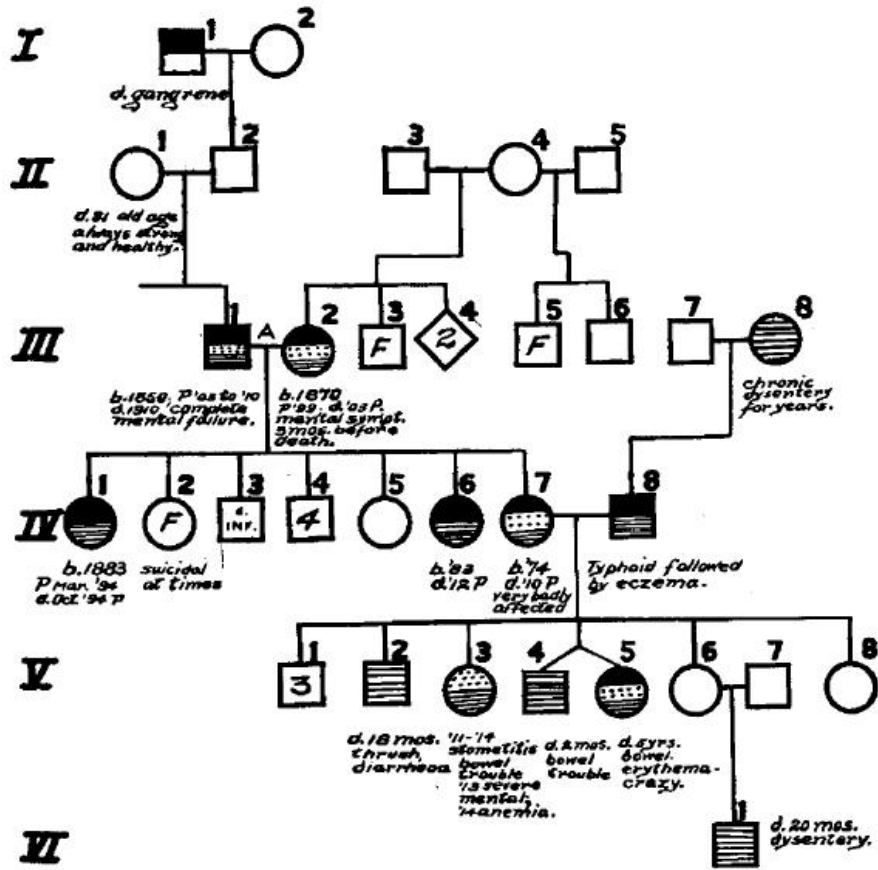


Figure 15

As evidence, he presents several sample pedigrees showing how pellagra had appeared through multiple generations of the same family.

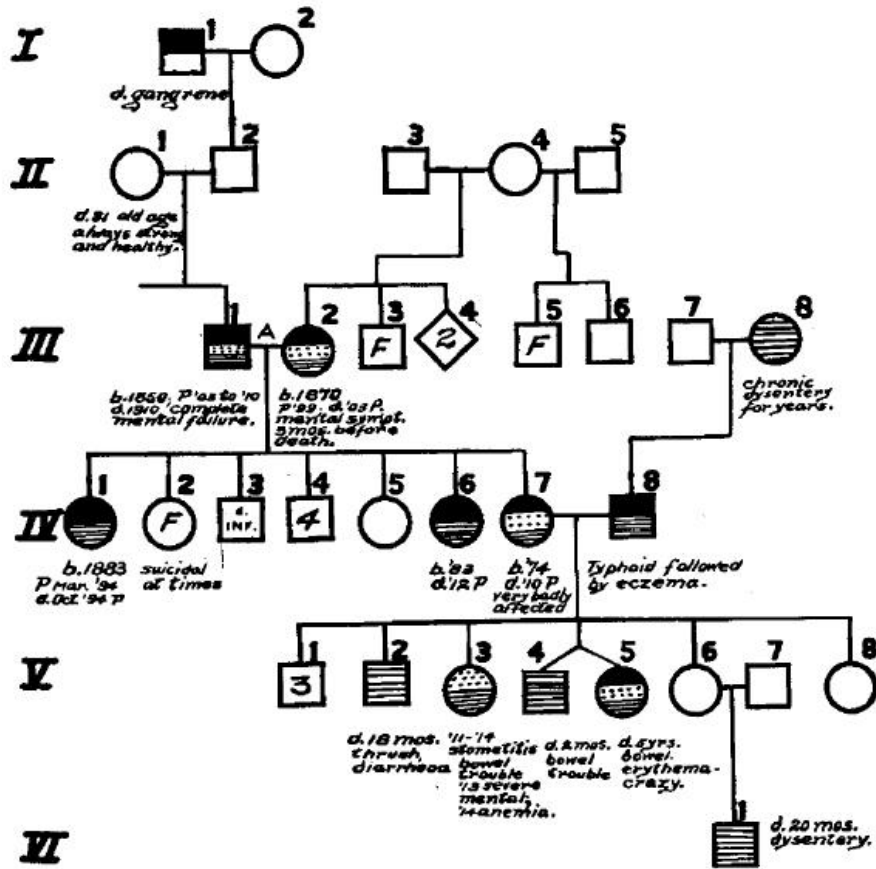


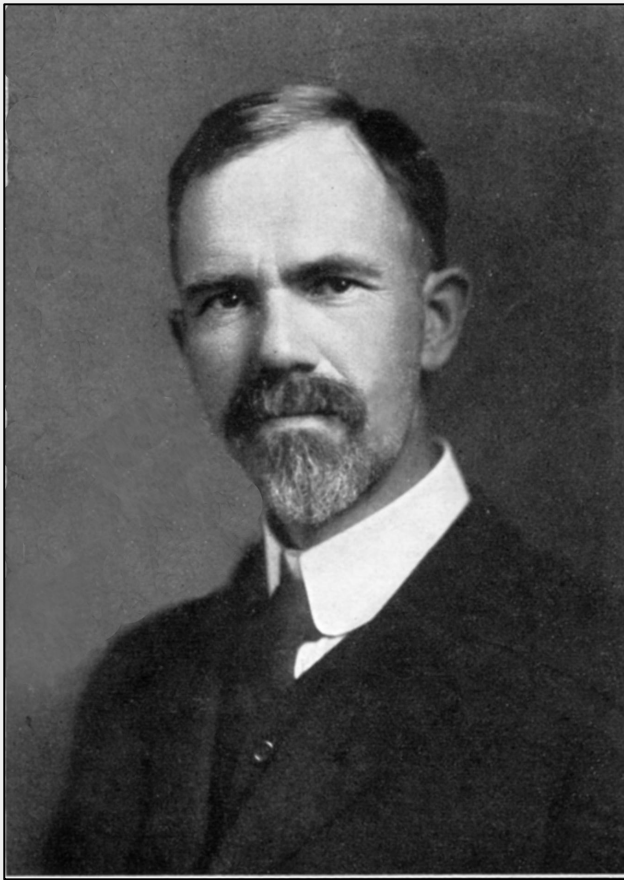
Figure 15

- Is a pedigree good evidence for Davenport's claim that pellagra is genetic?
- What other factors might explain why a disease might appear to "run in families"?



Later (in 1927), doctors find that dietary supplements of yeast can easily cure pellagra. So it is *not* genetic.

It is a vitamin deficiency. Its prevalence in the Southern U.S. could be explained by enduring disparities in wealth, meaning that over many generations poor farmers cannot afford a proper diet with enough meat and vegetables.



Let's return to 1911-12, when Davenport publishes an extensive report on *Heredity in Relation to Eugenics* and other studies.

## HEREDITY IN RELATION TO EUGENICS

BY  
**CHARLES BENEDICT DAVENPORT**

CARNEGIE INSTITUTION OF WASHINGTON  
 DIRECTOR, DEPARTMENT OF EXPERIMENTAL EVOLUTION  
 COLD SPRING HARBOR, LONG ISLAND, N. Y.  
 SECRETARY OF THE EUGENICS SECTION  
 AMERICAN BREEDERS' ASSOCIATION



NEW YORK  
 HENRY HOLT AND COMPANY  
 1911

### 192 HEREDITY IN RELATION TO EUGENICS

"The inhabitants are farmers and fishermen of average intelligence and good character, not addicted to drunkenness. A lack of enterprise, associated doubtless with the

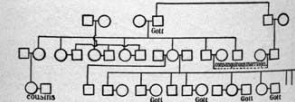


FIG. 169.—Pedigree of a portion of the Gorr family of the Maine Islands, illustrating frequency of cousin marriages in an isolated community.

nature of their occupations, seems to be the cause of their intermarrying." In this locality deaf mutism is the striking trait. In 1880 there was a proportion of 1 to 25 of the whole

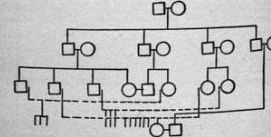


FIG. 170.—Pedigree of a family inhabiting Swan's Island, Maine, illustrating frequency of consanguineous marriage in a restricted and isolated community. The dotted lines connect cousins who have married each other.

population affected (Bell, 1889). Dr. Withington and Dr. Bell report cases of hermaphroditism also from this same locality.

### DISTRIBUTION OF INHERITABLE TRAITS 193

Block Island, comprising about 10 square miles, lies about 40 miles both from Newport, Rhode Island, and from Montauk Point. There are some fine old family names including Ball, Cobb, Dodge, Hall and Littlefield, which constitute a large part of the population of 1,500 souls. The limited area has, however, led those branches of the family who remain on the island to intermarry closely, as

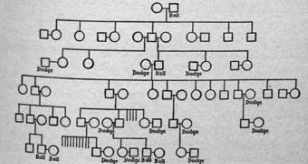
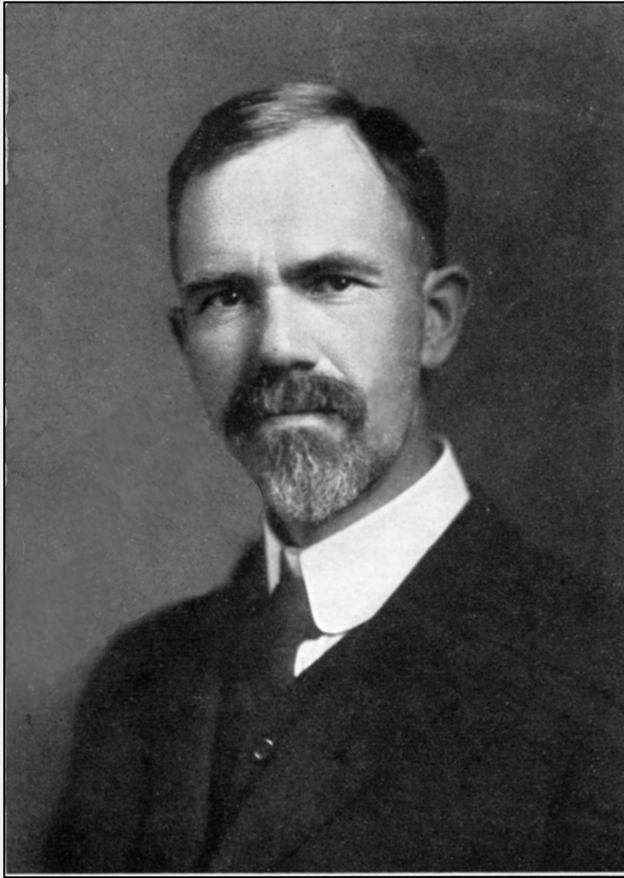


FIG. 171.—Portion of pedigree of the BALL family of Block Island showing frequency of marriage with Deafness and with BALL; a consequence of limited marriage selection in a small island.

illustrated in Fig. 171 based on Ball (1891). The result has not been good. There are families in which all the children are mentally deficient and many marriages that are childless.

As we go south along the Atlantic coast, beaches or "banks" replace offshore islands. When they are so far from the mainland, as at Pamlico Sound, as to make intercommunication difficult, consanguineous marriages occur in extraordinary frequency. A wide-spread trait that may be ascribed to such inbreeding is suspicion and mental dullness; and a relative high frequency of insanity. Even



Davenport has catalogued many human conditions as hereditary, with pedigrees for many of them. He presents a genetic basis for:

eye color

hair color

memory

epilepsy

insanity

temperament

narcotism

hysteria

speech defects

calculating ability

musical ability

blood diseases

pauperism (poverty)

criminality

handwriting

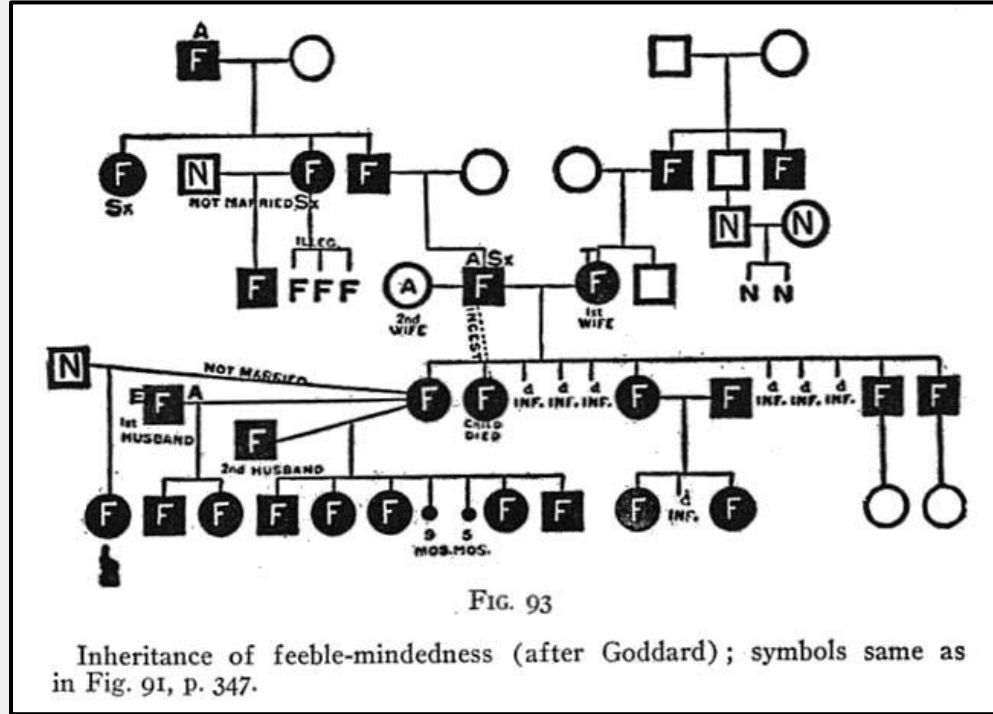
general mental ability

cancer

polydactylism



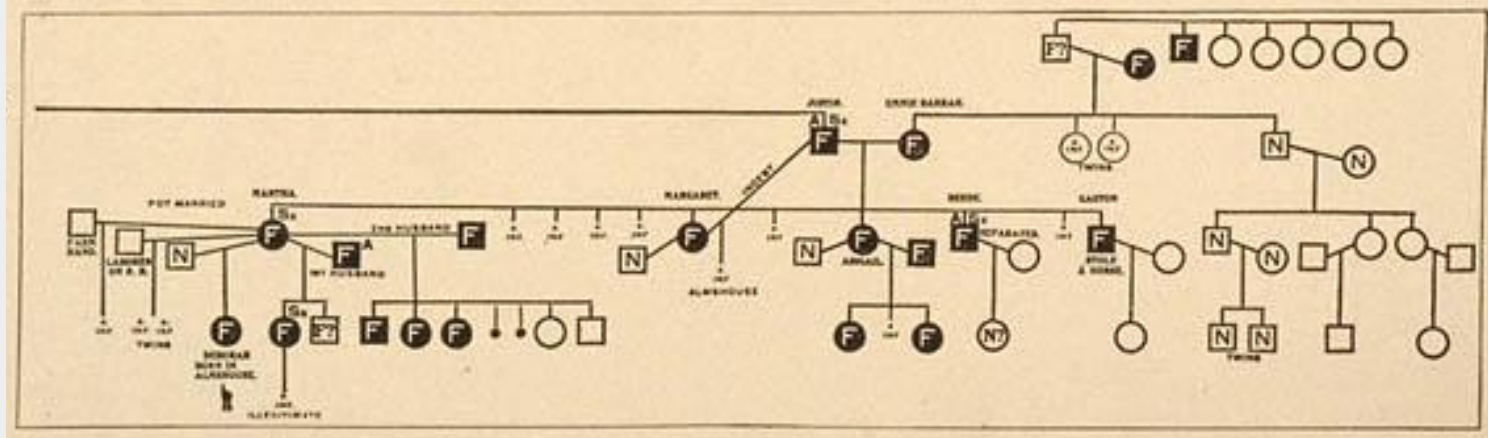
Let's focus just on feeble-mindedness, which Davenport describes as defective, abnormal, and inferior, and as presenting a "grave danger" to society.



Here, too, he uses a pedigree – where **F** designates feeble-minded individuals – intending to show that the trait is genetic, although Davenport does not define the trait clearly.

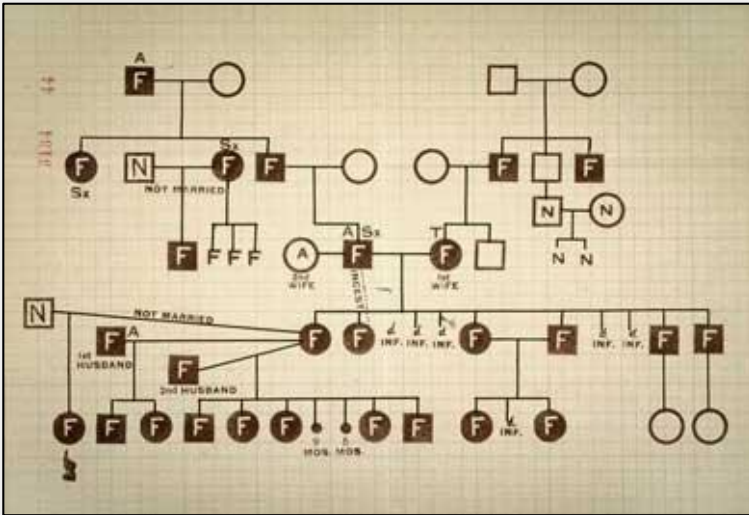


Here is another family, the Wolvertons, and their pedigree, presented by Henry Goddard.





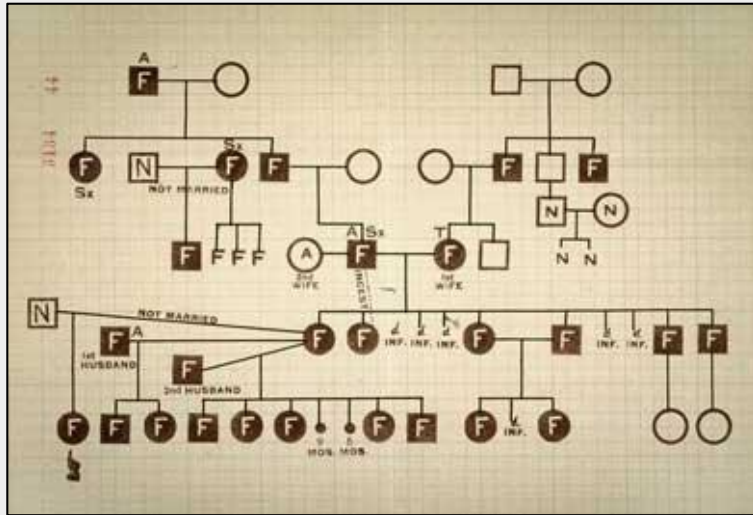
- As a biologist at the time, how do you view Davenport's claims about the genetic basis for feeble-mindedness and other traits?



- How will you respond?
- What actions will you take?



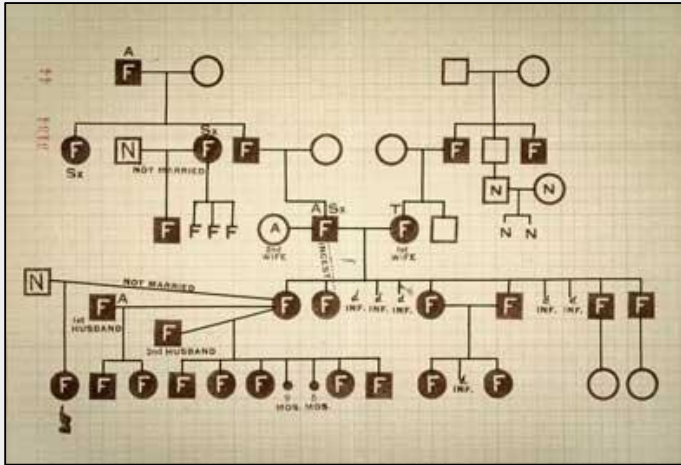
In 1912, Davenport presents his findings on "Heredity in Nervous Disease and its Social Bearings" at a meeting of the prestigious American Association for the Advancement of Science. His remarks are reprinted in the equally renowned *Journal of the American Medical Association*.





At the end of the presentation, Dr. Woods Hutchinson of New York concurs:

*As Dr. Davenport says, the more carefully these defectives are studied, the more the hereditary element comes out in them. ... the criminals, prostitutes, insane, epileptics, feeble-minded and inebriates.*



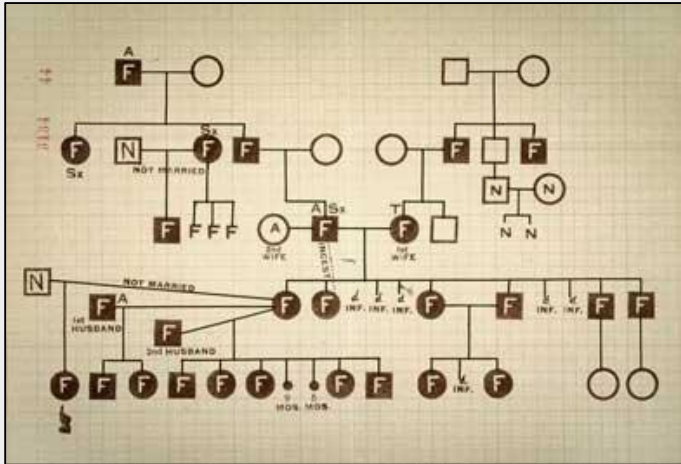
He refers to his work with criminals in Indiana, his investigation of a notorious pair of labor activist saboteurs, and the study of feeble-minded at a school in Vineland, New Jersey.



Other attendees agree.

A reporter documents approving comments from:

Dr. L. Pierce Clark of New York,  
Dr. William W. Graves of St. Louis,  
Dr. E.E. Southard of Cambridge, Mass.,  
Dr. Tom A. Williams of Washington, D.C.,  
Dr. Warren Calvin, of Fort Wayne, Indiana  
Dr. L. Grover Burnett of Kansas City, Missouri



They all endorse Davenport's views on feeble-mindedness as firmly grounded in personal experience and scientific data.



On the other hand, geneticist Thomas Hunt Morgan noted later:

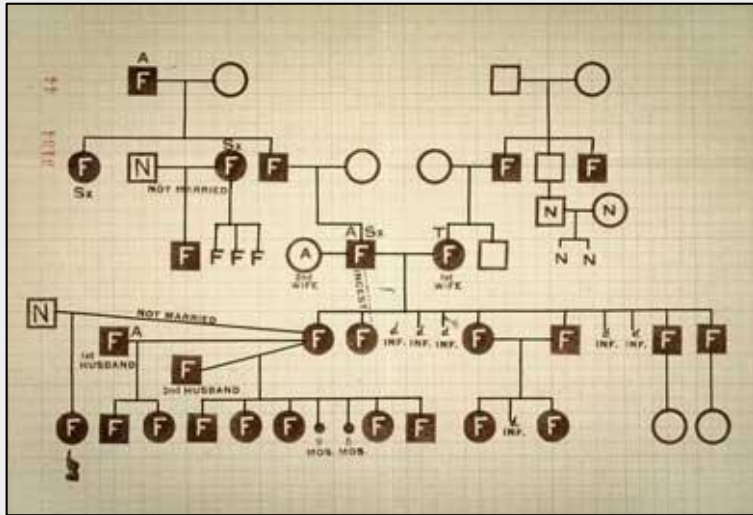
*Family pedigrees in which an unusual number of individuals [mentally] below par are present undoubtedly give the impression that something is inherited, but until all the social conditions surrounding the childhood of the individual are examined and given proper weight, serious doubts will arise as to what form of inheritances is producing the results. It is quite probable that there are extraneous factors involved in such pedigrees.*

British geneticist David Heron observes that the mental ability of ancestors has often been attributed without evidence.

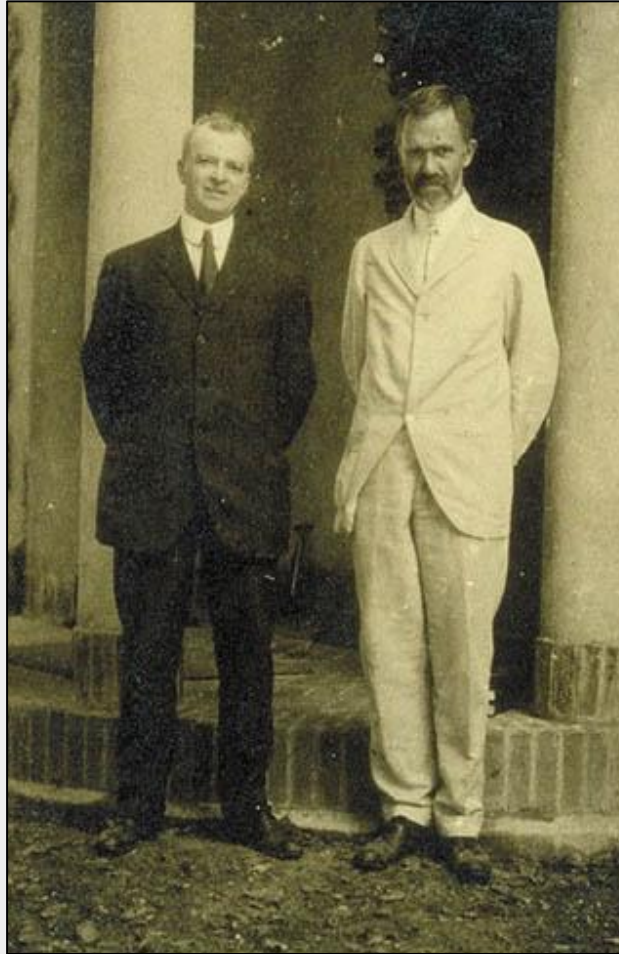
He also criticizes the data collection, noting that field workers were specifically instructed to search for instances that confirmed Mendelian patterns and to not record others. Namely, they “cherry-picked” an unrepresentative sample.



training field workers for  
the Eugenics Record Office

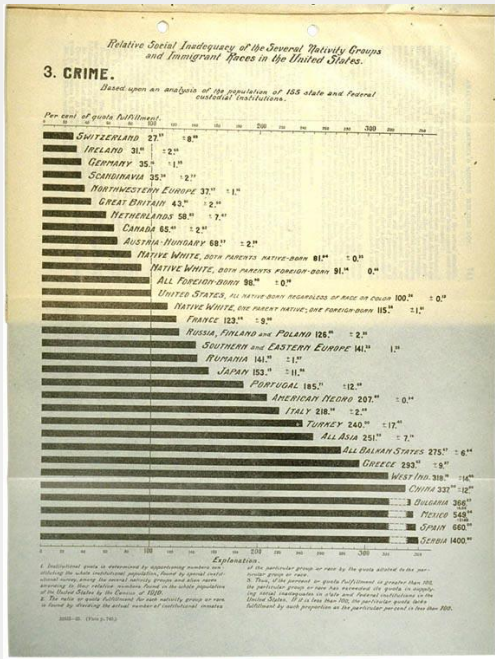


- As a fellow biologist – or as a citizen hearing these reports – how should you interpret this disagreement among apparent experts about the genetics of feeble-mindedness?
- What justifies your view?

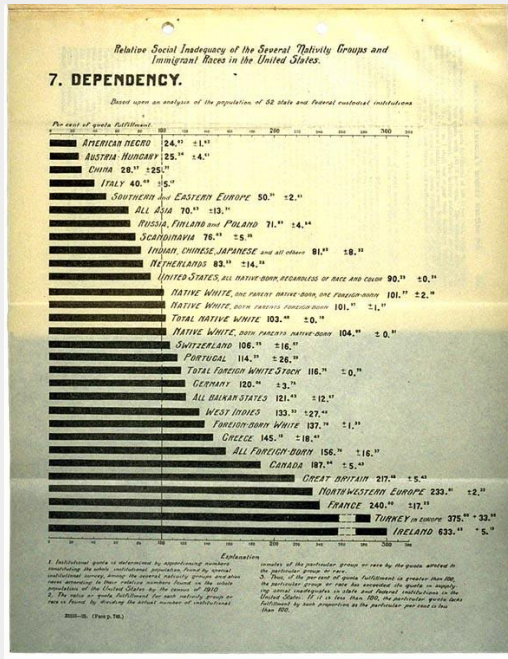


Harry Laughlin, Davenport's associate and Superintendent at the Eugenics Record Office, promotes the eugenics cause politically, although he is not trained as a scientist.

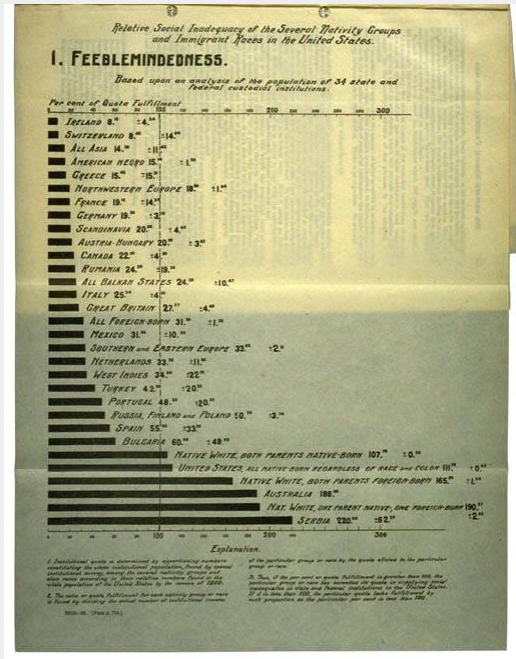
In 1922, he is appointed as an "expert eugenics agent" to Congress. He helps assemble legislation to limit immigration based on characterizing the undesirable genetic make-up of various nationalities, especially Eastern Europeans.



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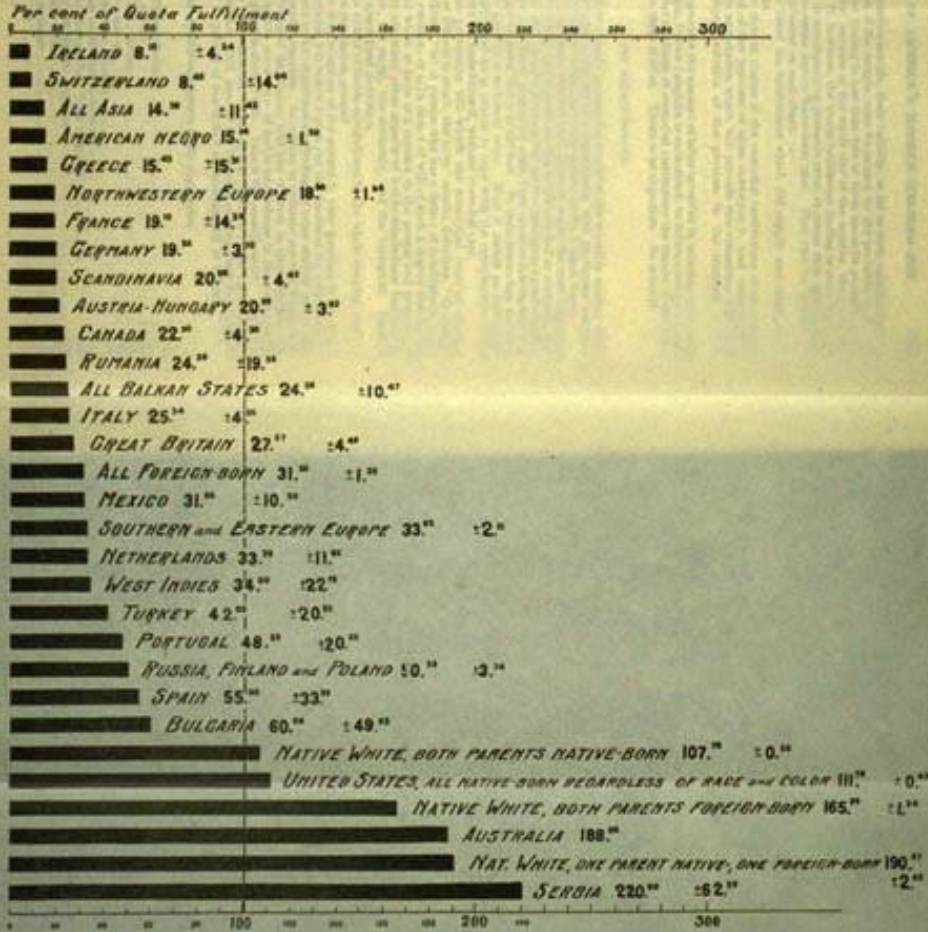


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Laughlin surveys recent immigrants and presents their levels of "social inadequacy" – including crime, dependency, epilepsy, and tuberculosis – based on national origin, with high levels from new Slavic and Jewish immigrant populations.

# I. FEEBLEMINDEDNESS.

Based upon an analysis of the population of 34 state and federal custodial institutions.



National Park Service: Statue of Liberty National Monument

- What is your view of this data as Congressional testimony, intended to inform public policy on immigration?

Laughlin has been presented an expert witness.

No others provide an alternative view.



I. FEBBLEMINDEDNESS.

Based upon an analysis of the 177 mental patients.

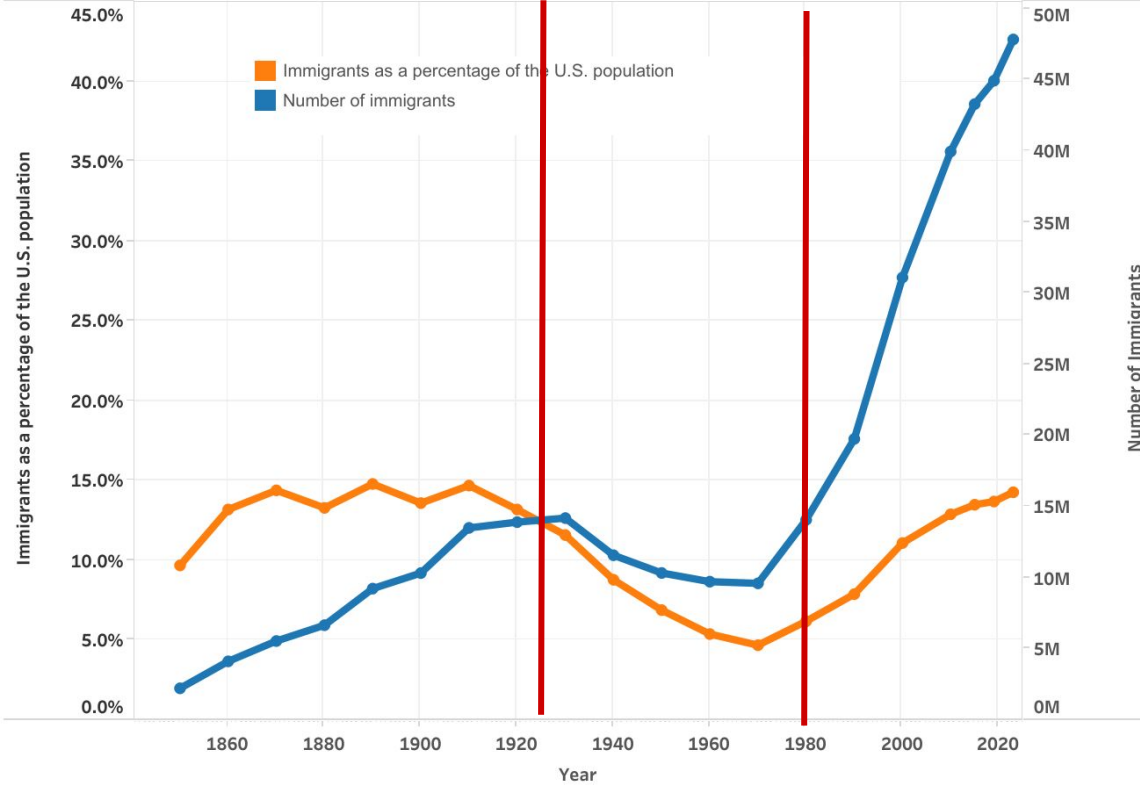
Per cent of Brain Pathology

IRELAND 8.1	14.1
NETHERLAND 8.2	14.2
ALL ASIA 14.0	18.0
AMERICAN NEGRO 15.1	11.1
GREECE 16.7	18.7
SOUTHWESTERN EUROPE 18.1	11.1
FRANCE 18.1	14.1
GERMANY 19.1	13.1
SCANDINAVIA 20.1	14.1
AUSTRIA-HUNGARY 20.2	13.2
CANADA 22.1	14.1
ROMANIA 24.1	25.1
ALL ISLAND STATES 24.1	10.1
ITALY 25.1	14.1
GREAT BRITAIN 25.1	14.1
ALL SWEDEN 26.1	11.1
MEXICO 31.1	10.1
SOUTHERN and EASTERN EUROPE 31.1	12.1
NETHERLAND 32.1	11.1
WEST INDIES 34.1	25.1
TURKEY 42.1	20.1
PORTUGAL 48.1	32.1
RUSSIA, POLAND and ITALY 50.1	12.1
SPAIN 55.1	23.1
BULGARIA 60.1	18.1
ITALY WHITE, BOTH PARENTS NATIVE BORN 101.1	12.1
UNITED STATES, ALL NATIVE-BORN REGARDLESS OF RACE and COLOR 101.1	12.1
NATIVE WHITE, BOTH PARENTS FOREIGN-BORN 102.1	13.1
AUSTRIA 103.1	18.1
ITALY WHITE, ONE PARENT NATIVE, ONE FOREIGN-BORN 104.1	12.1
GERMANY 105.1	13.1



- *As a member of Congress, how should you respond to Laughlin's testimony?*
- *As a biologist at this time, how should you respond to Laughlin's testimony?*
- *If you agree, should you endorse it publicly?*
- *If you disagree, should you criticize it in public media?*

## Number of Immigrants and Their Share of the Total U.S. Population, 1850-2023



1924



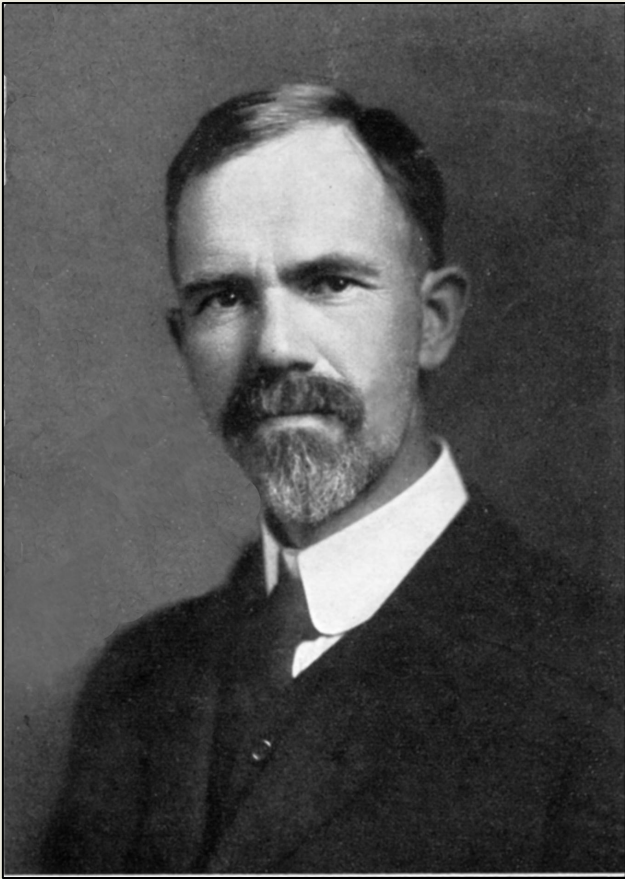
The Immigration Act is enacted in 1924.

Immigration of some groups is restricted by over 80% and remains at low levels for over a half-century.



The pretensions of eugenics become more apparent in subsequent years. In 1935, the Carnegie Institute, a major funder of the Eugenics Record Office, concludes that the research has no scientific merit. Several years later, it withdraws funding completely and the ERO is forced to close.





We may now return to Davenport's early publications and reexamine them for clues about their scientific status.

## HEREDITY IN RELATION TO EUGENICS

BY  
CHARLES BENEDICT DAVENPORT

CARNEGIE INSTITUTION OF WASHINGTON  
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COLD SPRING HARBOR, LONG ISLAND, N. Y.  
SECRETARY OF THE EUGENICS SECTION  
AMERICAN BREEDERS' ASSOCIATION



NEW YORK  
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1911

### 192 HEREDITY IN RELATION TO EUGENICS

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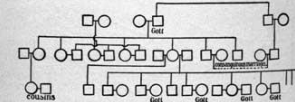


FIG. 169.—Pedigree of a portion of the GORR family of the Maine Islands, illustrating frequency of cousin marriages in an isolated community.

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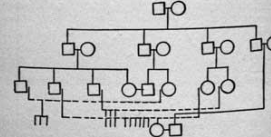


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### DISTRIBUTION OF INHERITABLE TRAITS 193

Block Island, comprising about 10 square miles, lies about 40 miles both from Newport, Rhode Island, and from Montauk Point. There are some fine old family names including Ball, Cobb, Dodge, Hall and Littlefield, which constitute a large part of the population of 1,500 souls. The limited area has, however, led those branches of the family who remain on the island to intermarry closely, as

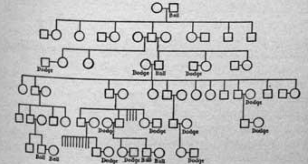
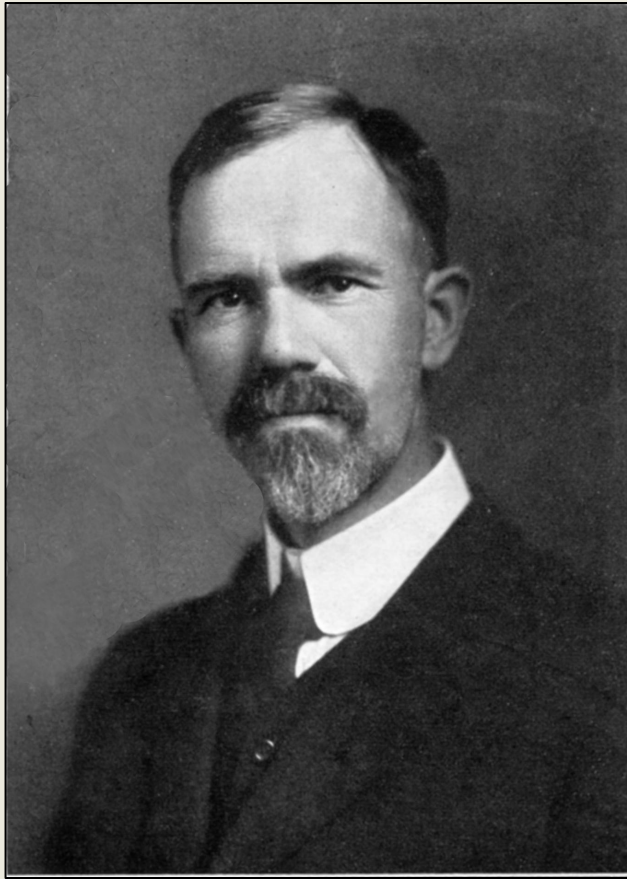


FIG. 171.—Portion of pedigree of the BALL family of Block Island showing frequency of marriage with DOBSON and with BALL; a consequence of limited marriage selection in a small island.

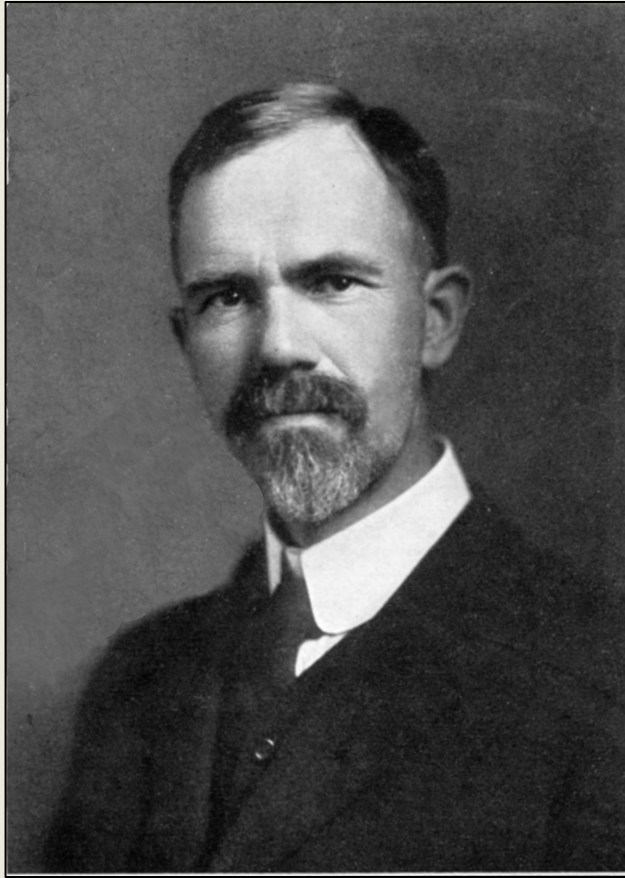
illustrated in Fig. 171 based on Ball (1891). The result has not been good. There are families in which all the children are mentally deficient and many marriages that are childless.

As we go south along the Atlantic coast, beaches or "banks" replace offshore islands. When they are so far from the mainland, as at Pamlico Sound, as to make intercommunication difficult, consanguineous marriages occur in extraordinary frequency. A wide-spread trait that may be ascribed to such inbreeding is suspicion and mental dullness; and a relative high frequency of insanity. Even



First, recall that Davenport described pellagra as genetic. Tuberculosis, too. The first is a nutrient deficient; the other, a bacterial infection. However, both were prevalent among the impoverished and socially disadvantaged.

- What does it mean to attribute these conditions to genetics, rather than (as many of Davenport's peers did) to other biological or social factors ?



Among other traits (such as eye color or stature), Davenport focused on:

insanity

temperament

narcotism

memory

hysteria

feeble-mindedness

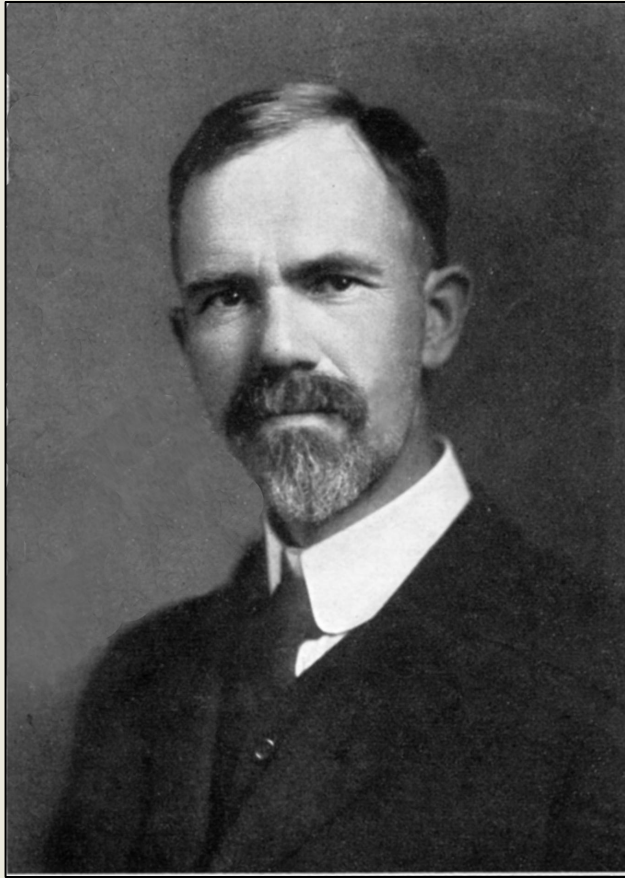
pauperism (poverty)

criminality

handwriting

general mental ability

- Whose interests might be served by viewing these conditions as genetic, rather than as caused by an individual's developmental environment or by social context?



Davenport characterized the conditions to be "solved" by eugenics as:

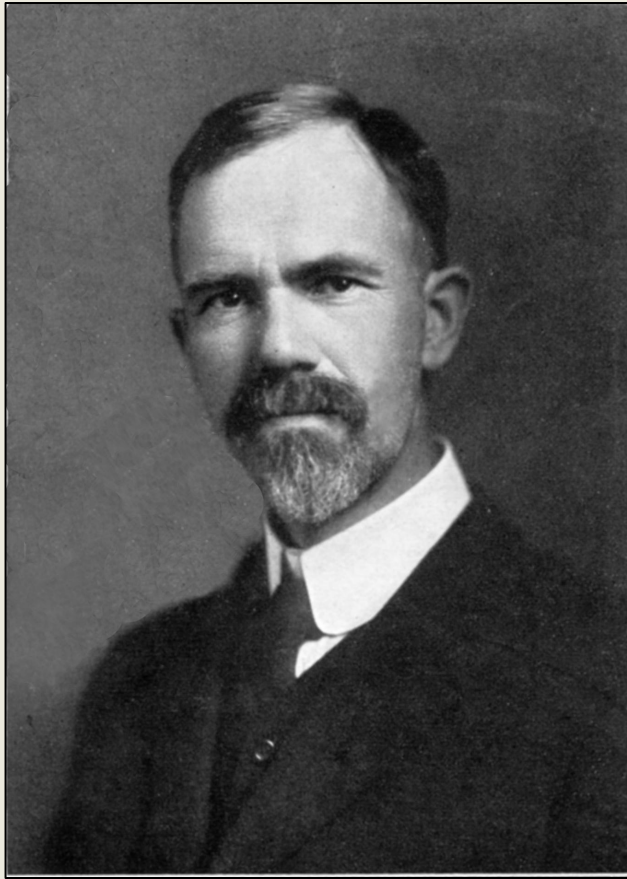
*desirable:*

industry  
ambition  
foresight  
abstinence  
self-control

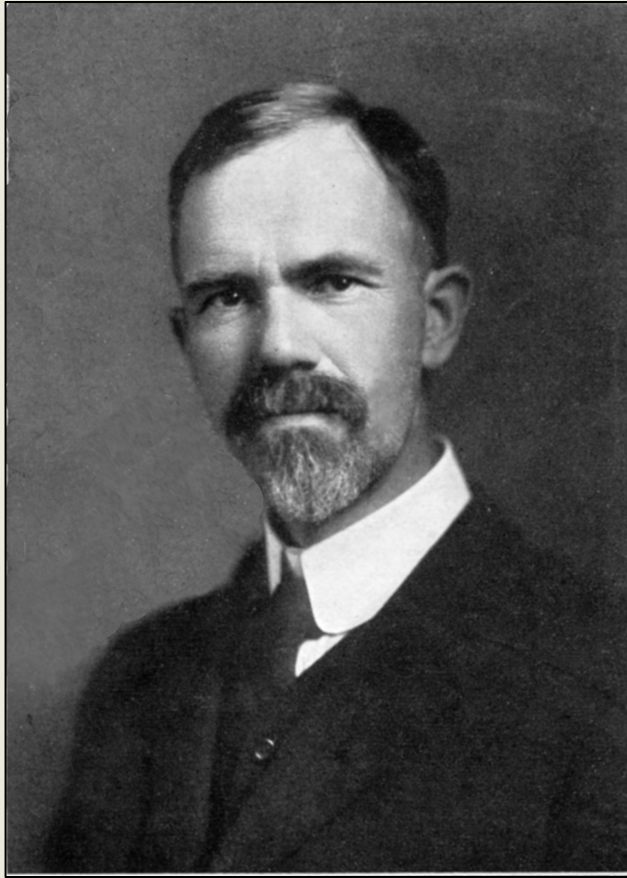
*undesirable:*

indolence  
listlessness  
licentiousness  
alcoholism  
social burden  
cost to the state  
abnormal  
defective, inferior

- How would you describe Davenport's vision of an improved society? What does it mean to call these values scientific categories?



- Why might others have found Davenport's (and others') claims about eugenics plausible or persuasive? (Or useful?) How would you frame a counterargument?
- What was the role of appealing to science in passing the Immigration Act of 1924 or in supporting other measures to limit "undesirables"?



- What do you think were Davenport's motives in studying genetics?
- How should that assessment affect the analysis of his scientific claims?
- How might an ordinary citizen or consumer at the time have developed an informed judgment of Davenport's eugenic claims?
- Based on this case, what general recommendations do you have for someone assessing scientific claims in the media today?



*Targeting*  
**MISINFORMATION**

<http://shipseducation.net/misinfo>