

Thomas Morgan

- Discovered some genetically determined traits are specific to only one sex
- Found genetically determined traits are in chromosomes
- Colleague of Stevens

Thomas Hunt Morgan (1866–1945) studied at Kentucky State College and Johns Hopkins University, where he earned his Ph.D. in 1890. His research focused on the evolution of sea spiders. Early on, Morgan was critical of Mendel's laws of heredity. Ironically, his contributions to the study of heredity helped to reinforce Mendel's ideas. Morgan also doubted the Darwinian view that natural selection forms new species. He wrote, "Nature makes new species outright." It is important to note that Morgan's discoveries on how heredity works were not intended to help forensic scientists use DNA to catch criminals. He was trying to investigate heredity in order to see how species really evolved or were created. Nevertheless, he contributed greatly to DNA research before the name even existed.



In 1908, Morgan and his team began experiments with *Drosophila*, more commonly known as the fruit fly. Morgan worked to discover a mutation of the fruit fly he could track and predict — white-eyed males. All of the wild flies were red-eyed. However, Morgan started seeing white-eyed mutant male flies. This was Morgan's first observed example of a spontaneous mutation, which was something he needed to see in order to prove species change by themselves.

Since Morgan had finally found a mutation that originated in his lab, he started breeding white-eyed flies with red-eyed flies to see if the mutation would continue. It did not, so Morgan assumed the white-eyed trait was recessive. In other words, when the white-eyed male fly bred with the red-eyed female, the female gene won out, leaving all of the offspring like their mother. Morgan then started breeding the white-eyed males with their sisters and, eventually, every other conceivable combination. In every case, any white-eyed flies were male.

The experiments continued, and many more spontaneous mutations were observed and mingled with others. In 1915, Morgan and his team published *Mechanism of Mendelian Heredity* as a strong argument for a theory of a linear arrangement of the genes in the chromosomes. He was awarded the Nobel Prize in Medicine or Physiology in 1933.

Resources

<http://www.nobelprize.org/medicine/laureates/1933/morgan-bio.html>

<http://www.cshl.org/public/History/scientists/morgan.html>