

Podcast: That weird time in history when humans had 24 pairs of chromosomes

Everyone knows that humans have 23 pairs of chromosomes. But if you'd looked at a textbook in the 1940s, the number would have been 24. So where did those two chromosomes go?

In the latest episode of Genetics Unzipped, part of our series covering 100 ideas in genetics, biologist Kat Arney solves the case of the missing chromosomes.

<https://geneticliteracyproject.org/wp-content/uploads/2019/04/012-Strands-of-Life-Genetics-Unzipped.mp3>

In the 1920s, American zoologist Theophilus Painter published the observation that humans have 24 pairs of chromosomes, based on his observations of dividing sperm cells in thin slices of testicles – an observation that went unchallenged for thirty years. The correct number of human chromosomes was only established in 1955, revealing a fascinating example of group think where researchers preferred to believe established dogma over the evidence they saw with their own eyes.

Arney also takes a look at the history of chromosomes, from their initial description as 'little skewers' inside dividing cells to the recognition of their role as the physical units of inheritance, forging the connection between the observations of 19th century cell biologists and the newly-emerging field of genetics.

Finally, Arney digs into the discovery of XY sex chromosomes—first identified in beetles by Nettie Stevens back in 1905—finds out why women have secret tiger stripes, and uncovers the complexities of coat color in calico cats.

[Full transcript, credits and show notes here.](#)

Genetics Unzipped is presented by award-winning science communicator and biologist [Kat Arney](#) and produced by [First Create the Media](#) for the UK [Genetics Society](#). Follow Kat on Twitter [@Kat_Arney](#) and Genetics Unzipped [@geneticsunzip](#)

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