

# What does the ancient world look like in the eyes of dinosaurs?

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The Science Development Council conducted research on genes and discovered that it was very likely that the dinosaurs saw the world in red. They can even see so many **shades of red** that the descendants of dinosaurs evolve reddening on their bodies (like shells and feathers). The purpose of this evolution is likely to serve the purpose of finding a partner. However, dinosaurs can also see many other colors.

According to Nick Mundy, " *The color vision through the spectral colors has evolved early on vertebrate species, so it's no wonder that the dinosaurs can also see the color. Our research for the first time It is shown that dinosaurs have a characteristic color vision, with red-sensitive eyes in the spectrum board* " .

To be able to see **the ancient world** through the eyes of a tyrant dinosaur, scientists compared them to the eyes of **turtles and birds** . Both species have common ancestors with species of non-bird dinosaurs. They focused on finding the development of **CYP2J19** , a gene that allows birds and turtles to turn yellow pigments into red.

These two species can use red pigments to " *color* " their beaks and their feathers. Even the ability to convert this pigment allows them to add reddish color to their retina, which will make the world appear in their eyes with more red light. In addition, having more CYP2J19 makes their ability to see red better. The researchers also

found that the appearance of this gene also made their ancestors visible in red.



The osprey has a great color vision, so is their ancestors.

The CYP2J19 gene first appeared and 250 million years ago, around the end of **the Permian** era when a series of species became extinct. And continued to exist in the evolution of lizard lizards (including lizards and turtles), later birds and alligators and non-bird dinosaurs.

*"These results are evidence that the 'red gene' has been developed from an ancient dinosaur,"* concluded Professor Nick Mundy.

Birds have the ability to see many different shades of red than humans. It is like people looking at many red, blue and green spectra. Most likely, the old dinosaurs were also able to see so many **red spectra** .



The ancestors of turtles are the first species to develop "red genes".

Interestingly, scaly **reptiles** as well as snakes have separated from the lizard species before turtles, and before the emergence of the CYP2J19 gene. So they do not have the ability to see red.

But the crocodile set from the lizard still retains CYP2J19, but natural selection has removed this gene because it is not necessary for crocodile survival.

Most modern birds have a very good color vision and they are closer to dinosaurs than crocodiles. And if the bird's ancestors were the same, it is very likely that the dinosaurs not only saw this world under each red light, but also blue, blue and many other shades.

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