

**MGM** = Miligold Macaw**YNA** = Yellow Naped Amazon[Home](#)[Back](#)[Top](#)[Mail](#)

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Arizona State University has found a "novel" chemistry at work in parrots' feather colors. For more than a century, biochemists have known that parrots use an unusual set of pigments to produce their rainbow of plumage colors, but their biochemical identity has remained elusive. Now, an Arizona State University researcher has uncovered the chemistry behind the colors of parrots, describing on a molecular level what is responsible for their bright red feathers. The work casts a new light on what is chemically responsible for the colors of birds, and defies previous assumptions and explanations for color variations in parrots, said Kevin McGraw, an assistant professor in ASU's School of Life Sciences. "Evolutionary biologists have not really thought hard about parrot coloration," said McGraw. "This research is exposing a whole new world of color communication in parrots and the potential physiological and biochemical roles of the new molecules we found in our work."

They found a suite of five molecules, called polyenal lipochromes (or psittacofulvins), that color parrot plumage red in all of the species studied. "We've uncovered a system where all red parrots use the same set of molecules to color themselves," McGraw said. It is a unique pigment found nowhere else in the world. We are fascinated at how parrots are able to do this. The fact that there is a single set of molecules unique to and widespread among parrots, suggests that it is a pretty important evolutionary novelty, and one we should carefully consider when we think about why parrots are so strikingly colorful," McGraw said.

McGraw said an interesting aspect of the five polyenal lipochromes that provide the red in parrots, is that the pigment is found only in the bird's feathers and nowhere else in the body of the bird, indicating that parrots manufacture these molecules internally and directly at the maturing follicles of the growing, colorful plumage.

Editor's note: Is this evolutionary - or is this just another wonder of the Greatest Engineer's biodiversities? [http://www.innovations-report.de/html/berichte/biowissenschaften\\_chemie/bericht-40481.html](http://www.innovations-report.de/html/berichte/biowissenschaften_chemie/bericht-40481.html)