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Kathleen M. Wong

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Bar Coding With DNA

Most consumers are familiar with the zebra-striped bar codes that identify products at stores and markets. Now a similar approach can be used to distinguish new species fast, sidestepping the painstaking anatomical studies employed in traditional taxonomy. Paul Hebert of the University of Guelph, Canada, and colleagues sequenced the cytochrome *c* oxidase 1 gene, which codes for a critical metabolic enzyme, in DNA from 260 museum specimens of North American birds. They report in the *Proceedings of the National Academy of Sciences* that each species of bird possessed a unique sequence for this gene, while birds belonging to the same species had nearly identical versions. Based on this barcode information, the scientists say they may have identified four new bird species. Hebert's team also collaborated with Daniel Janzen of the University of Pennsylvania, Philadelphia, to analyze 480 blue skipper butterflies from Costa Rica. As caterpillars, many had appeared somewhat different, but all metamorphosed into nearly identical adult butterflies. The barcoding research, reported in the journal *PLoS Biology*, suggests the butterflies belong to at least 10 different groups. The splits coincided with caterpillar types. The technique works best on species that diverged long ago and have had time to evolve unique barcode sequences. If accepted by the scientific community, barcoding could add a new dimension to the definition of species.

- [New York Times](#)
- [Nature News](#)

Long-Necked Sea Monster Sucked In Prey

At first glance, *Dinocephalus orientalis* hardly seemed cause for alarm. Its small head, perched atop a scrawny neck, promised an equally wimpy body would follow. But the minute this flippersed dinosaur opened its fang-toothed mouth, the battle was basically over. According to researchers led by Chun Li of the Chinese Academy of Sciences, the newly-discovered reptile used a neck twice as lengthy as its meter-long body to launch surprise attacks on prey. The 230-million-year-old creature is considered a type of protosaurus, a group of ancient reptiles whose absurdly long necks have puzzled scientists since the 1850s. The new species takes this throatiness to an even greater extreme. Twenty-seven cervical vertebrae, some of which were augmented with ribs, made the animal's neck naturally stiff. The researchers report in the journal *Science* that when the reptile lunged at prey, muscles probably straightened and stiffened that neck even further, expanding the neck's interior volume. The resulting suction helped *D. orientalis* lunge toward and seize its prey while swallowing the wave of water that would telegraph its movements to prey.

- [CNN \(Associated Press\)](#)