Illustrator's books and art have influenced paleontologists, artists, and Michael Crichton.

**New life for dinosaurs**

**By Frank D. Royance**

The Baltimore Sun

Climb the stairs to Gregory Paul's third-floor Charles Village apartment and you may quickly find yourself slipping back 100 million years or more into the Mesozoic Era.

In Baltimore artist's walls are filled with lush portraits of dinosaurs in wildlife in action. Tyrannosaurs step off across mud flats of ancient times in the fur of feathered archaepoetops cavorcitered in the surtells of the surfline.

The dynamic scenes are part of his work for the new Princeton Field Guide to Dinosaurs—his third field guide, a full-time illustrator, author, and dinosaur consultant to TV, museums, and the movies, is no newcomer.

For 30 years, scientists say Paul's art and research have contributed to the evolution in scientific thinking that has upended old perceptions of dinosaurs as sluggish, dim-witted and hornless.

His influence "goes both to the artists and to the scientists," said Matthew Carrano, curator of Dinosauria at the Smithsonian Institution's National Museum of Natural History.

"He was one of the few people who were doing those images where you have superactive dinosaurs and feathered dinosaurs. He was getting it out there in the public mind well before it was the standard scientific story," he said.

Thomas R. Holtz, a dinosaur paleontologist in the preholy department at the University of Maryland, College Park, said Paul's art "represents a real turning point in the history of the reconstruction and the visual portrayals of dinosaurus."

A 1980 book by Paul, called "Predatory Dinosaurs of the World," was particularly influential.

"It was one of the first books on dinosaurs to be written," Carrano said, "and people ran with it. It was not a conventional book, it was not a standard, big reptiles, slow and clumsy approach."

"Like any kid, he was fascinated by their size and strange forms: 'It's an alien world that's gone. Dinosaurs are the closest things we have to aliens.'"

As he began to draw them, he was puzzled. "They didn't live on land, but were 'more erect-limbed and more like giant mammals or birds.' So when it spread by word of mouth in the early '70s that they had high metabolic rates (like birds and mammals), it made sense to me," he said.

Scientists such as John Ostrom and his colleague Jack Horner at the University of Montana, Bakker, then were finding out that dinosaurs were in fact warm-blooded and active, and that their descendants were still alive today, in the form of birds. -now a widely accepted theory.

Inspired by the insightful paleontologist illustrator of Charles Knight and William Berry Paul began to see dinosaur art as "more than art."

Beyond a handful of art courses, and a few years at a community college, Paul is largely autodidactic. He taught himself Latin in 1979 for "informal studies," and to work with Bakker, then a geologist at Johns Hopkins University's department of earth and planetary sciences.

All student in the field program after Bakker left Hopkins in 1984, but he never pursued a degree. "I didn't want to be an academic. I don't deal well with bureaucracy. I think I'd be very bad at it," he said.

"It hasn't seemed to matter: Paul became as immersed in dinosaur science, as he was in illustration. He has published scores of technical papers, abstracts, letters, reviews and articles in respected, peer-reviewed journals."

"They got published because they're good scientific papers," Carrano said.

Paul has also written six books and co-written another. And he was a consultant for the "Jurassic Park" movies. Paul's ideas can make waves.

"Greg... is notorious in paleontology as a taxonomic "bumper,"" Holtz said. "He tends to put a lot of species in fewer categories, as opposed to people who would split them up."

Holtz said Paul's publishing may have come from Crichton, who drew velociraptor as the name of one of the species best on eating the humans in his novel. Paleontologists argue that velociraptor was no bigger than a turkey and that the predator in Crichton's book was closer to a "Deinonychus" Filmmaker Steven Spielberg made it even bigger than that.

"Now everyone in the world knows it as velociraptor," Holtz said. But for all the paleontologists' complaints, "We've all seen (the movie's) times of the world."

Paul, who holds a wealth of anatomical knowledge and uses it to produce meticulous reconstructions of dinosaurs, reassembles skeletons on paper based on his study of the recovered fossil bones, then adds muscle based on the close in the bones. Skin and (sometimes) feathers follow, often derived from fossil impressions.

When the notion of feathers on certain species of dinosaurs, and direct links to modern birds, first entered the scientific discussion, Carrano said, "Greg was willing to go farther at the time than most scientists were."

Holtz believes Paul didn't go far enough. "Our understanding now is they would be far more feathered."

Paul approached the Princeton University Press about doing the field guide, and Robert D. Kirk, the editor of the Field Guide series for the past 11 years, was immediately on board.

The 316-page book to more than 100 species includes a long introduction to dinosaurs' biology, behavior and the world they lived in. Paul then catalogs each major dinosaur group and the most widely accepted species within, often, with concise data on what is known about each.

More than two dozen color wildlife scenes illuminate key sections, and each species is further illustrated with geological drawings of skulls, muscle charts and many drawings of the creatures in the flesh.

Paul takes inspiration where he finds it. The mud flats, plains and towering thunderhead behind his tannoyame on the hunt were based on a photo of a B-52 with Watari, a Strategic Air Command base. The surf curling behind his pair of archaepoetops came from a photo snapped at Anse-aux-Meadows Island.

He sticks close to the science, though. His depictions showing dinosaurs in herds or pods of juveniles, for example, come from analyses of fossil tracks, skin texture, feathers and even some colors from fossil evidence.

The publisher gave Paul's art plenty of space. The book is a hardback measuring 8 inches by 11 inches-a fit for the series.

"They were going to do it in a more traditional-size field guide, softbound," Kirk said. But the shape of some of these dinosaurs "wouldn't lend itself to this sort of treatment."

Besides, Kirk added, "It's not as though, you're going to stuff it in your back pocket and stomp around Baltimore and identify these things."

frank.royance@baltim.com

twitter.com/franroyance