PALEONTOLOGY

Fifty Million Years of Wild West

Smithsonian Publication on Ancient Mammals Stands as Monument to Dr. Gidley, Who Devoted Life to Their Study

By DR. FRANK THONE

See Front Cover

WHEN OLD-TIMERS speak of the "Old West"—with perhaps a misty, far-away look in their eyes—they mean the rampageous, hard-riding, free-shooting days when Buffalo Bill was young. Days when herds of bison and pronghorn were so vast that their numbers could not even be estimated, let alone counted; when a man's reputation as a mighty hunter depended not on a careful creeping up and a single shot but on how many buffalo he could shoot down in a half-hour's ride around a herd!

These days, they tell us sadly, are gone forever. The Old West was a very brief phase in American history, anyway: it was like a "nova" among the stars—a sudden flare into brilliant glory, followed by a rapid decline to extinction. The passing of the bison and the pronghorn was rapid and nearly complete simply because even uncountable herds of game could not stand up against the reckless mass slaughter that was visited on them during the eighties.

The old-timers often do not realize that the glory whose departure they mourn was foredoomed in its very origin. It was the product and the servant of the civilization that appeared to extinguish it. Buffalo Bill and his hunting companions and rivals were not killing their prodigious daily dozens of bison just for fun; they were hired by the railroad to get meat for the track-laying laborers. Their job, though more picturesque than that of white-aproned butchers, was just as utilitarian. And the railroad marched across the plain as inexorably as an ancient Roman road, and brought civilization as inevitably.

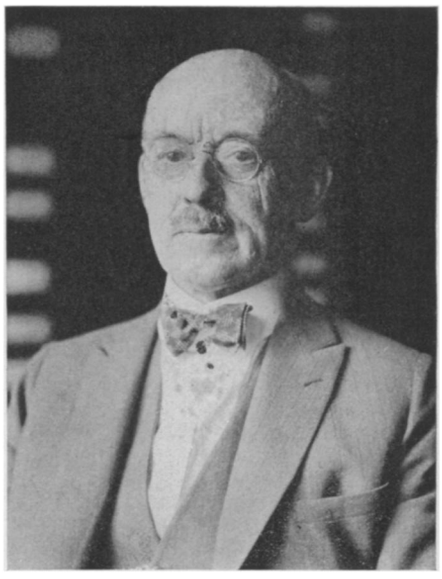
So the game herds of the West vanished, and the hunters' occupation was gone. They settled down to ranching, or bartending, or running for sheriff. Only their king kept a shadow of the old glory alive for a few years more, wandering the world with his great tented show. Now even that is gone.

The coming of civilization to the Plains, with its fringe of hard-riding, straight-shooting hunters brushing the population of native animals and native redmen aside as a plow-coulter turns wildflowers under to make room for wheat, really wrote "Finis" to a longer chapter of earth history than most of us stop to think about. For the Plains had belonged to the game animals for more than mere centuries; it had belonged to them for ages, for so many thousands of years that one can only say vaguely: maybe fifty or sixty millions, maybe more. Man's hustling domination of this continent is after all only the period at the end of a long geological sentence.

We hear a lot about the past fifty years in the West; not much about the preceding fifty million. Man is a talkative creature, who writes books and sets up monuments and demands attention generally. The animals only lived and died, and their monuments (few at best) are buried only where patience and understanding can find them out and decipher them.

A Modern Ezekiel

There died recently in Washington a scientist who had spent an active lifetime in recovering for us a record of this unknown Wild West of fifty million years ago. This man, Dr. J. W. Gidley, spent many sweltering summers at the dusty task of digging fossil bones out of solidified earth layers, and many long winters at the equally dry job of cleaning them, putting them together, and reading their scientific significance. But to him it was not a deadly occupation. In the midst of death he was in life. He had the vision of a modern Ezekiel, to clothe those dry bones with sinews, and with flesh, and with skin. And before he passed, he enlisted the aid of a skilled artist, E. Cheverlange, to put something of what he could see in those dry bones into a series of vivid sketches, showing the animals as they looked when the West was really wild. The pictures, and Dr. Gidley's descriptive text, are printed in a volume sponsored by the Smithsonian Institution.



DR. J. W. GIDLEY

As paleontologist of the U. S. National Museum, Dr. Gidley could see fossils as though they were still living animals.

Dr. Gidley's story of the strange beasts that once roved the West centers around the Bad Lands of South Dakota. This labyrinth of sun-baked canyons, which early French voyageurs called "mauvaises terres" because it was so easy to get lost there, is quite the opposite of "bad" to the fossil-hunting scientist. The small streams that carved the landscape into such fantastic shapes have given innumerable cross-sections down through the successive layers that represent ancient plains built one on top of the other—for the country round about was once as flat as western Nebraska is today They have also made it possible for the collector to cut into the canyon-sides and with relatively little labor mine out the bones of the beasts that grazed there when the Bad Lands were Good Lands, ages ago.

The wide plain that has since been cut into the Bad Lands was built up layer by layer by downwashed material from the Black Hills to the west, when the Black Hills were tremendous mountains. Sometimes the floods that spread the gravel and earth laid down thick strata, sometimes thinner; the rivers that ran through the region were sometimes deep and swift, sometimes shallow and slow. But always there were great game

herds, and some of the animals left their carcasses in places where the bones were covered, deeper and deeper as the ages passed, until at last they were laid bare again by the cooperation of eroding streams and the scientist's pick and trowel.

Like a Chinese Book

In a formation like this, where the geology is normal and practically undisturbed, the record is read like a Chinese book, from the bottom page upward. The oldest bones are in the lowest strata.

Reading in this manner, Dr. Gidley traced the history of the rise and prosperity, decline and extinction, of numerous animal dynasties. Some of them are parts of the family trees of animals living still, though often in remote parts of the world. Others have vanished utterly, leaving no descendants either direct or collateral.

Notable among these are the titanotheres, whose name, Englished, means "titan-beasts." As restored to the flesh by the artist's pencil, a titanothere looks very much like a rhinoceros, except that it is much bigger, at least in some species, than any living rhinoceros. The most striking difference, superficially, is the arrangement of the two horns. The two-horned rhinoceroses now living have their horns in tandem, one in front of the other; but the titanotheres had their horns arranged as a pair, side by side at the end of the enormous snout. Moreover, these horns were set on bony projections protruding from the skull, like the horn cores of modern cattle and sheep, whereas true rhinoceroses have nothing of the kind, but wear their horns simply as a sort of highly specialized warts on the skin. There are other differences, too, in the structure and arrangement of the bones, that cause scientists to class titanotheres and rhinoceroses in quite separate groups.

But along with these great titan-beasts that looked like rhinoceroses and were not, there were real rhinoceroses that looked very little like their modern stocky, blocky kin of the African and East Indian jungles. They apparently had no horns, and they were long-legged and comparatively slender in build. Very probably they were graceful in movement and at least moderately fleet of foot. In general, their habits of life must have been more like those of present-day elk or wild horses than like those of the slow, stupid, dull-sighted, truculent modern rhinoceroses.

The artist has made a sketch of a dramatic scene involving one of these horse-like hornless rhinoceroses. It shows the poor animal attacked by a long-tailed saber-toothed tiger. The great cat is pictured as attacking much as a modern tiger or lion sometimes attacks; gripping a hard hold with its forelegs, slashing at its victim's vitals with raking strokes of its hindlegs, and at the same time sinking its tremendous eyeteeth into the base of the throat like daggers, seeking the heart or the great blood vessels.

What the saber-tooth left at the finish of his feast may have been cleaned up by another formidable flesh-eating beast, the hyaenodon, or "hyaena-tooth." This animal was wolf-like in general build, but bigger than a modern wolf and heavier-bodied. The hyaena-like dental equipment, however, suggests that it was a carrion-eater rather than a genuine beast of prey. And for all its wolf-like appearance, hyaenodon has no part in the ancestry of present-day wolves.

Little Wolves; Little Horses

There were, however, species of true wolves in the region as well, one about the size of a modern coyote; another a little creature only half as big.

Just as there were little wolves, so also were there little horses. The characteristic horse of the old pre-Bad Lands plain was the three-toed mesohippus, a larger animal and more evolved than the much-berhymed little eohippus; but still no larger than a big dog. Mesohippus apparently did most of his dry-land running on his middle toe, which has since become the only functional survivor of the original five in the modern horse; but the two shorter side toes, each with its separate hooflet, may have been useful on soft or wet ground. It is a strange thing that the horses, which originated and evolved in America, had died out completely when white men came, and were re-introduced by the Spaniards.

Dr. Gidley's account of the finding of his first mesohippus skeleton in the Bad Lands has a strong dash of drama in it. It was long enough ago so that the appearance of an Indian might mean trouble—and a feathered and moccasined Sioux did suddenly appear just as he had got the skeleton cleared of its overlying earth. But the brave only sat and watched with fascinated interest, and then, in a mixture of broken English and his own tongue proceeded to set forth his inferences about the "shunktanka cistilla," or "little horse"—and they would have done credit to a university man! Whereupon Dr Gidley purchased his porcupine-quill moccasins for a silver dollar, and the brave went his way, barefooted, enriched and happy.

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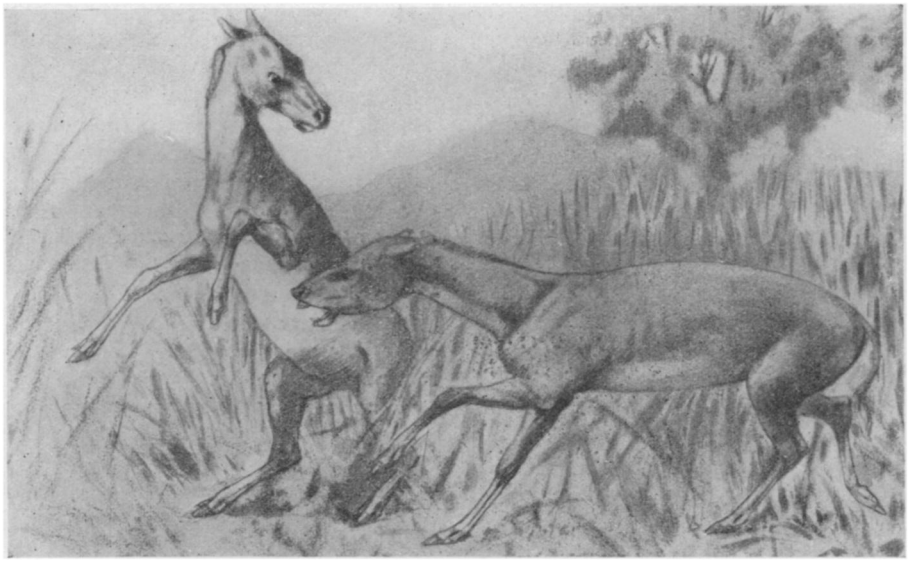

LITTLE THREE-TOED MESOHIPPUS

A horse no bigger than a good-sized dog that ramped and squealed on the western plains long ago.