

## BOOKS

'Hudson's writing is like grass that the good God made to grow, and when it is there you cannot tell how it came.' —JOSEPH CONRAD

# A Species of One

## Finding W.H. Hudson

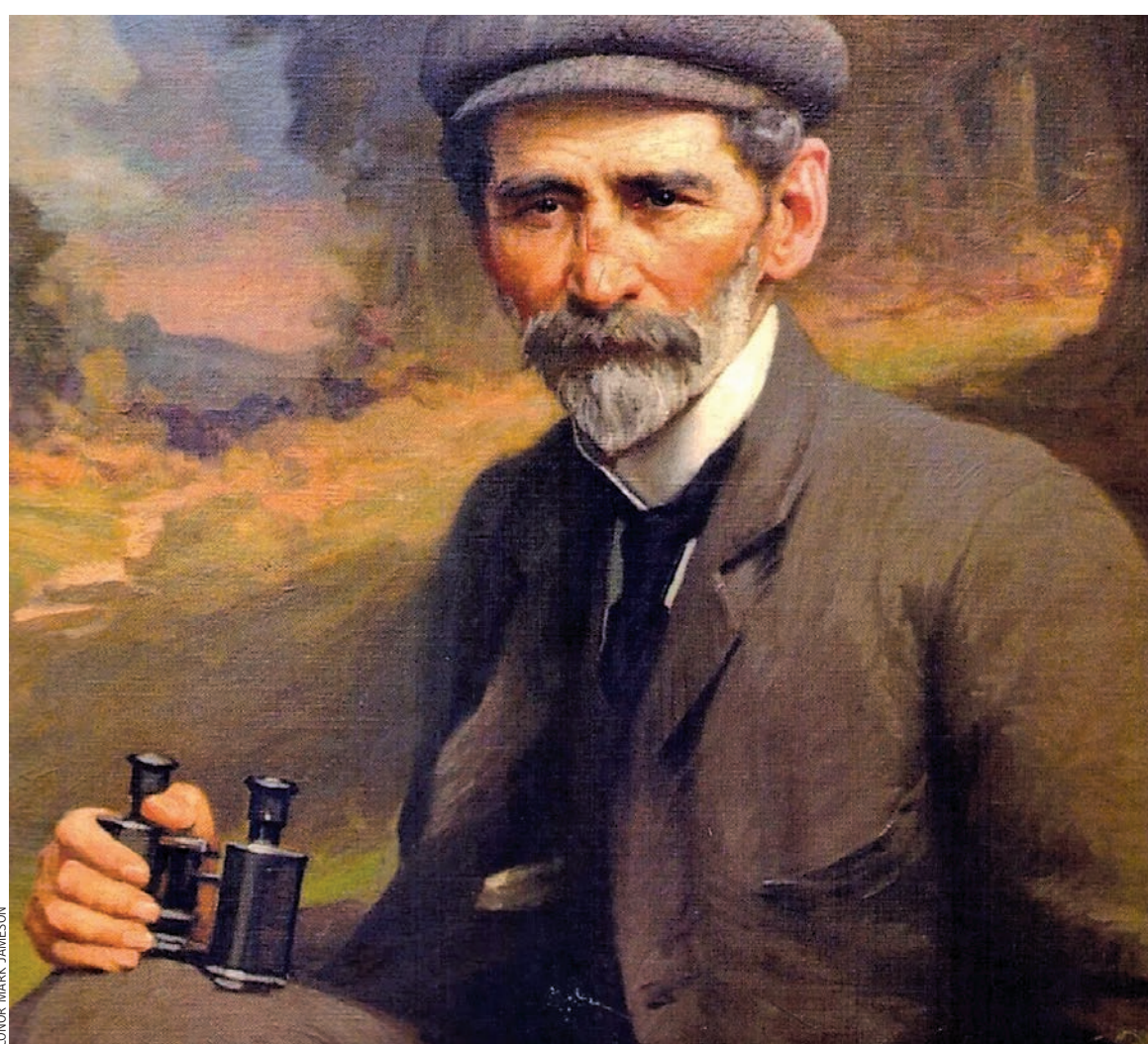
By Conor Mark Jameson  
Pelagic Press, 368 pages, \$32

By CHRISTOPH IRMSCHER

**W**ILLIAM HENRY Hudson (1841-1922), one of the founding members of the Royal Society for the Protection of Birds, must have been quite a sight when, perched high atop his Sunbeam bicycle, he roamed the English countryside in search of his beloved feathered friends. A beanpole of a man, decked out in tweeds, waistcoat and laced boots, looking more British than the British, he kept himself cool by carrying a moist handkerchief inside his hat. Some believed that Hudson, sharp-eyed and constantly on the move, was like a wild bird himself—a hawk, perhaps, or an eagle. His laugh sounded like that of the green woodpecker, reports Conor Mark Jameson in his new biography, adding that he could no longer listen to that bird without thinking of Hudson.

During the 25 years that Mr. Jameson worked in the offices of the Royal Society for the Protection of Birds, a portrait of a binocular-wielding, squinty-eyed Hudson stared back at him silently from over a mantelpiece. A Cambridgeshire writer and conservationist, Mr. Jameson became determined to restore Hudson's voice. He combed through the archives for traces of his hero and meandered across Britain—sometimes on a bicycle himself—to re-create Hudson's travels (and was mightily pleased when he found a goldfinch exactly where Hudson had heard it too). The result is a sprightly, conversational book, sprinkled with autobiographical asides, a creative blend of detective work and narrative intuition ("we can only guess"), as hard to pin down as its subject.

If "Finding W.H. Hudson," at the end, doesn't really "find" W.H. Hudson, that's par for the course. Hudson was a puzzle even to his closest friends. For starters, he wasn't really British. Born in Argentina to parents originally from the United States, Guillermo Enrique, as he was known to his neighbors, grew up on the Pampas surrounded by horses, sheep and herds of cattle, with a small library his only link to a world of cultural refinement. Hudson later burned much of his correspondence, but that hasn't kept the biographers from wondering about his reasons for emigrating to England in 1874. In his "Living in the Sound of the Wind" (2015), the model



**BIRD MAN** Detail of the Frank Brooks portrait at the Royal Society for the Protection of Birds headquarters.

behind Mr. Jameson's efforts, the literary critic Jason Wilson asks the obvious question: Why would a professed nature enthusiast like Hudson decide to leave Argentina, a country with "enormous open spaces and a blue dome of sky and no pollution," and settle in soot-blanketed, overcrowded London? To which Mr. Jameson adds the equally difficult-to-answer question that preoccupies him: Why would a South American naturalist, virtually from the moment of his arrival, become so passionately involved in efforts to save the wild birds of a country not his own?

Hudson's life abounded in contradictions. After he came to England, he threw himself into natural-history writing, producing a steady stream of the most beautiful descriptions of South American as well as domestic birds, conjuring "the overflowing gladness of the lark; the spirit of wildness of the black-cap; the airy, delicate tenderness of the willow-wren" ("British Birds," 1895). But while Hudson remained adamant that he wasn't "one of you damned writers," he became internationally known for a novel, "Green Man-

sions" (1904), in which a Venezuelan political refugee hiding in the woods falls madly in love with a birdlike jungle creature named Rima (things don't end well). Hudson's lush reverie was later made into a Hollywood movie with lanky, unfailingly kempt Anthony Perkins alongside a pixyish Audrey Hepburn, who looks as if she had just popped in from her dressing room. Arguably, the fake-ness had started even earlier: Hudson himself never set foot in the Venezuelan wilderness.

Hudson didn't make it easy for people to like him. Even before he came to England, he loudly criticized Darwin for assuming a certain species of South American woodpecker fed on the ground and never visited trees. Darwin adjusted the offending passage but also snarked at this disrespectful "fellow worker," likely a disbeliever in evolution, who had so gratuitously attacked him. Mr. Jameson gives Hudson high marks for "his forthrightness" of approach but doesn't mention that Darwin turned out to be correct, after all—see Hudson's later, unapologetic admission in "Birds of La Plata" (1920).

Nevertheless, Hudson succeeded in attracting a large circle of devotees, and Mr. Jameson at times appears to be more interested in them than in Hudson himself. His book sparkles with skillfully drawn portraits of Hudson's female collaborators at the Royal Society for the Protection of Birds or of such friends as "Don Roberto," the Scottish-Hispanic politician Cunninghame Graham, who enjoyed parading his horse, gauchostyle, in Hyde Park. We learn much, too, about the literati who admired him, including Joseph Conrad, John Galsworthy and Virginia Woolf. (Ezra Pound thought well enough of Hudson to put him in his "Cantos," as "Huddy . . . taller than anyone present"). A Hudson superfan was the eccentric Margaret Brooke, the estranged wife of the rajah of the East Indian territory of Sarawak, who shared Hudson's twin passions for the tropics and ornithology: She would greet visitors to her Ascot mansion seated in a blue armchair, a green parrot attached to her wrist.

By the end of Mr. Jameson's impeccably researched book, Guillermo Enrique's secrets have been left

mostly intact. For example, we still don't know what to make of his likely sexless marriage to his much older landlady Emily Wingrave, a former opera singer who barely reached up to his elbow, or of his affair (if indeed it was) with the journalist Linda Gardiner, the editor of Hudson's posthumously published "Rare, Vanishing, and Lost British Birds" (1923). It seems that W.H. Hudson himself was a bit of a lost bird, too.

## An emigrant to Britain from Argentina, W.H. Hudson became a defender of the birds of his adopted home.

We do know that Hudson came to regret his decision to leave his native country. "When I think of that land so rich in bird life," he sighed in "Birds of La Plata," "I probably made choice of the wrong road of the two then open to me." But maybe it was precisely this experience of self-induced personal loss, of an opportunity given and then abandoned, that enabled him to be more attentive to losses of a different, larger kind—the disappearance of so many birds from British woods, fields and shores. Mr. Jameson aptly describes the passage of the 1921 Plumage Bill, banning the use of feathers in human clothes, as one of the highlights of Hudson's life.

"Finding W.H. Hudson" gets us close to its odd protagonist, though never closer than Hudson himself got to many of his birds. Recalling a time in his Argentinian youth when he stalked a little red heron (now the striated heron) into a bed of rushes, Hudson admits he at first couldn't locate the bird anywhere, only to discover, to his surprise, that it had been right next to him, a perfect imitation of a rush, neck and body frozen into an image of unassailable straightness. As Hudson circled around it, the bird turned, too, its motions corresponding exactly to Hudson's own even as it remained rigidly in place. The elusive Hudson had found his match in nature: "I could not finish admiring, and thought that never had anything so beautiful fallen in my way before."

Mr. Irmischer is the author of "The Poetics of Natural History," available in a new edition with photographs by Rosamond Purcell.

# Instructions For Building An Animal

## From One Cell

By Ben Stanger  
Norton, 368 pages, \$30

By ADRIAN WOOLFSON

**I**N THE 1960S, the polymathic Cambridge scientist Sydney Brenner contributed to the deciphering of the genetic code—the mechanism specifying how the DNA sequences of genes are translated into the amino-acid sequences of proteins. In the 1970s, Brenner set out to define another code: the generative biological rules that determine how the genes within a single cell delineate the three-dimensional organization of multicellular organisms. "How genes might specify the complex structures found in higher organisms," he wrote in a paper on the genetics of the tiny transparent worm *C. elegans*, "is a major unsolved problem of biology."

Once cracked, this generative code of living things could convey humankind with an unimaginable ability to modify the structures of living things. It also has the potential to help us address such enigmas as why we get ill and the mechanism behind aging. Brenner's brilliance was to realize that a problem of this importance and complexity would only be tractable if studied in simple model organisms. The otherwise inconsequential *C. elegans* was perfectly suited to this task. It comprised only 959 cells and had a conveniently short three-day reproductive cycle.

Decades later, despite considerable progress in the field of evolutionary development, or evo-devo, the genera-

tive rules of biology have not yet been adequately defined. In his insightful and erudite "From One Cell," the University of Pennsylvania doctor and researcher Ben Stanger details the "foundational discoveries" that have contributed to our current understanding. All were made in model systems of differing complexities, ranging from viruses and bacteria to sea anemones, flies, frogs and mice.

The relevance of such organisms to the biology of human beings was summarized by the French scientist Jacques Monod, who stated that "What is true for *E. coli* is true for the elephant." This maxim referenced the universality of biological structures and the biochemical unity of all life on Earth, resulting from its shared evolutionary origin. A similar sentiment was expressed by the 19th-century French embryologist Étienne Geoffroy Saint-Hilaire, who stated that there is, "philosophically speaking, only a single animal." Nature, in her parsimony, appears to have used a similar method for building all animals, and indeed all living things.

The key conundrum in the development of a human being from a zygote—the single-celled product of the fusion of an egg and sperm—is how a uniform set of genetic instructions is differentially programmed to produce multiple cell types that self-organize into a distinct three-dimensional form. We now know that the secret to building organisms resides in gene regulation. Different cell types activate and repress genes in distinct ways, just as in an orchestra a cellist and an oboist might look at the same score but follow only their designated parts. The unique regulatory fingerprint superimposed onto a cell's genome is known as its epigenome, which is established through chemical modifications to regulatory regions of genes and the histone proteins they associate with.

Dr. Stanger artfully guides us through key experiments that contrib-

uted to the foundations of our knowledge about embryonic development, and he provides sketches along the way of some of the researchers involved. The author also highlights the role played by serendipity and Nature's coquettish revelation of unexpected phenomena. When the bow-tie-wearing "child of privilege" Ernest McCulloch found himself thrown together with

his hobby, the construction of miniature scale models of trains, boats and planes. That Mr. Gurdon came last in a biology class of 250 students in high school illustrates a recurrent theme in science. Many high achievers have atypical intellectual abilities not captured by conventional "intelligence" metrics.

The book contains several intriguing



**ELEGANT** Electron micrograph image of a soil-dwelling nematode worm.

James Till who was "raised on a farm in rural Saskatchewan," it was Till's pragmatism coupled with McCulloch's impetuosity that led to the discovery of the first multipotent stem cell, capable of generating a full set of human blood cells.

Another illuminating passage is the author's account of John Gurdon, the quintessential English gentleman, Nobel laureate and discoverer of nuclear cloning. Mr. Gurdon's achievements stemmed from his frustrated attempts at studying entomology, and he only developed the manual dexterity necessary to manipulate cell nuclei through

revelations. One is that "tumors do not invent new biology, but instead use existing biology in new ways." They inappropriately activate genes invoked in embryogenesis. Development and cancer are intertwined, the author explains, with each cancer being in effect "its own species." Another surprise is the ease with which substantive biological modifications can be achieved. The Japanese Nobel laureate Shinya Yamanaka showed, in a trick worthy of the escapologist Harry Houdini, that differentiated cells could be coaxed to "travel back in time" and revert to an undifferentiated pluripotent state capa-

ble of generating all cell types.

Dr. Stanger briefly touches on the therapeutic potential of Dr. Yamanaka's induced pluripotent stem cells and the recent misuse of genome editing. But he does not address the most powerful genome-modification method of all. The emerging new science of synthetic genomics coupled with artificial intelligence should enable genomes to be authored and synthesized from scratch. This will play a pivotal role in defining the generative laws of biology. Once such rules have been defined, they will have the potential to significantly influence the future of our species.

## All animals develop via similar steps, due to our shared origins: 'What is true for *E. coli* is true for the elephant.'

The author largely avoids any discussion of the potential risks and utilities of such discoveries, stating that he does not wish to conjure up "some fantastical image of a utopian or dystopian future." But we do need to discuss the future, one way or another. To state that "the benefits must be weighed against the risks" is inadequate in an environment where, as the author puts it, "gaps continue to widen between scientists and the public" as well as between "scientists and other scientists."

Avoiding any substantive discussion of potential consequences is unfortunately common in contemporary popular accounts of molecular genetics. It would be more responsible for authors and experts to forthrightly address them.

Mr. Woolfson is the author of "An Intelligent Person's Guide to Genetics."