



George Schaller looks for Marco Polo sheep (*Ovis ammon polii*) in Afghanistan in 2004.

CONSERVATION BIOLOGY

Wild at heart

Henry Nicholls talks to pioneering field biologist George Schaller — still studying iconic species at 82.

“**I** sit in the forest. I hear branches crackling,” says George Schaller, recalling a close encounter with a wild giant panda more than 30 years ago. The large female sits down just 5 metres from him. “Her head sinks to her chest and she falls asleep,” he says.

With a career spanning more than six decades, pioneering field biologist Schaller is no stranger to such moments. He made the first studies of an extraordinary range of charismatic mammals, including the Bengal tiger (*Panthera tigris tigris*), the East African lion (*Panthera leo nubica*), the snow leopard (*Panthera uncia*) and the Tibetan antelope, or chiru (*Pantholops hodgsonii*), as well as the giant panda (*Ailuropoda melanoleuca*). He has tracked some seriously elusive mammals, confirming the existence of the antelope-like saola (*Pseudoryx nghetinhensis*) in Laos and locating a new population of Tibetan red deer (*Cervus canadensis wallichi*) not far from Lhasa. He has distilled the essence of hundreds of such sojourns in the wildest regions on Earth into 15 books, 7 of them intended for an academic audience. These include

The Giant Pandas of Wolong (University of Chicago Press), coauthored with Hu Jinchu, Pan Wenshi and Zhu Jing 30 years ago.

Schaller's first overseas expedition left the United States for what is now the Democratic Republic of the Congo in 1959, to study the mountain gorilla (*Gorilla beringei beringei*) in the Virunga Mountains. Sponsored by the New York Zoological Society, this was the first serious scientific study of the species, and it paved the way for the work of primatologist Dian Fossey. On one occasion, he climbed a tree to get a better view of a gorilla family and was joined on a branch by one of the females. “We were both nervous, but something like that never leaves you,” he says. Now 82, he returned in September from a five-week expedition to Brazil in his capacity as vice-president of wild-cat conservation charity Panthera in New York. The group's ambitious Jaguar Corridor Initiative seeks to protect the species across its entire 6-million-square-kilometre range, which spans 18 countries from Mexico to Argentina.

The highlight of the trip, says Schaller, was a rare sighting in Brazil's Amazonia National

Park in the southwest of the Amazon basin. “We were on a small boat in one of the rivers and spotted a beautiful black jaguar, all glossy with muted gold eyes,” he says. “It lay on the bank of the river. We watched it for half an hour and then left just to give it peace.”

As Schaller has got to know individual animals and species arguably better than anyone else alive, he has advocated tirelessly for their protection. Few policymakers or members of the public “read scientific papers or could care less about them,” he points out. So as well as writing papers and academic studies, and making recommendations to government departments, he has devoted considerable energy to making his findings accessible through popular-science books, eight so far. The public responds to the plight of large, often charismatic animals. “That automatically provides protection to all the other species and the habitats in that area,” he says.

When he began the gorilla study, Schaller planned to write two books, one technical and one popular (they became, respectively, *The Mountain Gorilla* (1963) and *The Year of the Gorilla* (1964), both published by University of Chicago Press). He carried two notebooks into the rainforest: one for field notes, the other for personal reflections. “Memory is lousy,” he says. He has stuck to this technique, despite pens frozen in sub-zero temperatures and lampless tents filled with wood smoke. His devotion to the daily ritual of transcribing his thoughts and emotions shows in the dramatic first-hand detail that defines much of his writing.

“If you look at nature shows on television, most of them are dismal,” says Schaller. “Beautiful animals, but no message.” His popular books offer a direct challenge to such simplistic visions. They do focus on stunning landscapes and the fascination of individual animals and iconic species, but Schaller offers more. Successful conservation, to succeed, must operate in a complex

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cultural ecosystem, as important to Schaller as natural ecosystems. And decades of field-work have given Schaller a talent for observing humans — creatures who are, he says, “much better at hiding their real actions and thoughts than animals are”.

There is a risk in telling it how it really is: “In some countries, if you say too much you can't go back.” His critique of individual and institutional failings in *The Last Panda* (University of Chicago Press, 1993) “got some interesting responses”.

But he clearly didn't go too far. Schaller has spent more time in China than in any other country. After *The Giant Pandas of Wolong* was published in 1985, he left the study of

AURORA PHOTOS/ALAMY

the species to his Chinese colleagues. Yet he is drawn back year after year to the Changtang, the great northern plain on the Tibetan Plateau, to study species such as the chiru, the wild ass called the kiang (*Equus kiang*) and the wild yak (*Bos mutus*), as well as snow leopards. *Tibet Wild* (Island, 2012) chronicles the challenges and joys of conducting research on Earth's highest plateau.

"One reason I like working in China is that the people are very pragmatic," he says. He is only just back from participating in a snow-leopard survey on the plateau, where winter temperatures frequently fall below -30°C . In the new year, he is off to Iran to check on the Asiatic cheetah (*Acinonyx jubatus venaticus*).

Given that Schaller has witnessed the destruction of habitats, the fragmentation of populations and the trade in endangered species, is he disillusioned? Although he acknowledges that apathy, greed and corruption threaten nature, he recognizes major achievements. The population of mountain gorillas has recovered to roughly where it was around 50 years ago; China has created more than 60 national parks across the giant panda's range; the illegal poaching of chiru

G. SCHALLER



Schaller, a herdsman and a snow leopard.

for their fur has been brought under some control in China. The Changtang Nature Reserve, established in 1993 as a direct result of Schaller's work, is larger than Italy.

Schaller's legacy also has a strong human dimension. "The thing I treasure most is leaving behind young biologists who worked with me and who will carry on to train the next generation," he says. "I get uplifted all the time. I see the progress." ■

Henry Nicholls is author of *The Way of the Panda* and the Animal Magic blog at *The Guardian*.

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Books in brief



Searching for the Oldest Stars: Ancient Relics from the Early Universe

Anna Frebel (translated by Ann M. Hentschel) PRINCETON UNIVERSITY PRESS (2015)

As a "stellar archaeologist", Anna Frebel tracks metal-poor stars — the "ancient messengers" that kick-started the cosmos's chemical evolution. Her discoveries include a Milky Way star 13.2 billion years old and superannuated stars in dwarf galaxies that orbit our own. In this account of her work, she neatly balances the technical and the personal — not least in chapters on the mesmerizing slog of nightly observations, many using Chile's 6.5-metre Magellan telescopes.



Patternalia

Jude Stewart BLOOMSBURY (2015)

We are often only half-aware of graphic patterns such as paisley or polka dots, or the patterns that pulsate in nature, from fractals to flocking birds. Jude Stewart here brings "patternalia" to the fore and crisply decodes the mathematical, scientific and cultural connotations behind it. Dip in for some pointed erudition on the tension between comforting algebraic numbers and their 'transcendental', patternless cousins; varieties of military camouflage from chocolate chip to tiger stripe; and the revolution wrought by the programmable, futuristic Jacquard loom, demonstrated in 1801.



Great Soul of Siberia: Passion, Obsession, and One Man's Quest for the World's Most Elusive Tiger

Sooyong Park GREYSTONE (2015)

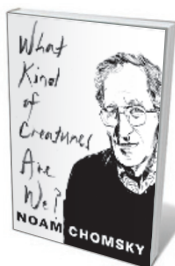
Just 350 Siberian tigers from a once thousands-strong population pad through Russia's northeastern birch forests: massive, elusive, "burning bright". For this astonishing ethological study, South Korean film-maker Sooyong Park spent two decades alternately tracking the beasts and holed up in underground bunkers, seeking glimpses of them in subzero weather. His paean to one of the world's biggest cats has a piercing immediacy distilled from thousands of heart-stopping sightings and encounters. A landmark achievement.



First Bite: How We Learn to Eat

Bee Wilson BASIC (2015)

With televised cake-baking compulsive viewing and Western obesity levels at an all-time high, humanity's relationship with food is a strange melange. For her lucid survey, journalist Bee Wilson uses how we eat as children as a springboard for discussions of the wilder shores of adult consumption. Along the way, she dishes up an impressive range of research in neuroscience and nutrition on topics from the evolution of the Japanese diet to babies' self-directed preferences for, say, turnips, as demonstrated in the fascinating, flawed work of twentieth-century US paediatrician Clara Davis.



What Kind of Creatures Are We?

Noam Chomsky COLUMBIA UNIVERSITY PRESS (2015)

At 87, linguist Noam Chomsky is still nimbly tackling big questions about human nature — here, in less than 200 pages. Hanging his analysis off palaeontologist Ian Tattersall's theory that the human sensibility was born 50,000–100,000 years ago, he remakes his case for biology-based linguistics, discusses the "new mysterianism" that is delimiting humanity's capacity for comprehension, and extols libertarian socialism. However, although thoughtful individually, these arguments betray their origins as lectures and fail to gel. [Barbara Kiser](#)