BOOK REVIEWS

Lizards Observed

The Bengal Monitor. WALTER AUFFENBERG. University Press of Florida, Gainesville, 1994. xxviii, 560 pp., illus. $79.95.

Many monitor lizards are large and impressive—they are often the centerpiece of reptile house exhibits. Monitors are not particularly tractable research subjects, but they have received an extraordinary amount of attention from dedicated students. Currently, 44 extant species are recognized, all of which occur in Africa, Asia, or Australia (the New World is sadly impoverished). Some 27 species occur in Australia, including one lineage that has evolved dwarfism (hatchlings of the smallest species weigh only 1 gram). A Pleistocene fossil monitor (dating from 19,000 to 26,000 years ago) from Australia is estimated to have reached 7 meters in total length and to have weighed over 600,000 grams. Although monitors are morphologically conservative, they vary in mass by five orders of magnitude. No other terrestrial animal genus exhibits such a range of size variation; there is proportionately almost as much difference in mass among species of monitors as there is between a mouse and an elephant.

The Bengal monitor, *Varanus bengalensis*. [From The Bengal Monitor]

Monitors are active predators, and many eat prey that are large relative to their own body size. Most monitor lizards are top predators. One species is frugivorous. Some species are aquatic, others are terrestrial, and still others are saxicolous, semi-arboreal, or truly arboreal. Monitor lizards live in a wide variety of habitats, ranging from mangrove swamps to dense forests to savannas to arid deserts. Many species have become endangered.

Walter Auffenberg has devoted 15 to 20 years to studying three species of monitor lizards in the wild. His first set of studies, of the world's largest living lizard, resulted in the publication of *The Behavioral Ecology of the Komodo Monitor* (University Press of Florida, 1981). Komodo monitors are ecological equivalents of large saber-toothed cats, using their sharp, serrated teeth and a slashing bite to disembowel large mammals; these monitors have killed water buffalo as large as 590 kilograms. Auffenberg's second book, *Gray's Monitor Lizard* (University Press of Florida, 1988), was a detailed autecological study of the frugivorous Philippine monitor. This very sedentary species, long thought to be extinct, was rediscovered and studied by means of radiotelemetry.

The third and latest book in this monumental trilogy reports on a detailed 13-year study of a more typical, insectivorous monitor. Auffenberg studied the Bengal monitor in the laboratory, in museums, and in the field primarily in India and Pakistan. He concentrates on diet and foraging behavior. Insects hiding underneath cattle dung pats constitute an important source of nutriment for these lizards in parts of their range. These lizards use their snake-like forked tongues extensively when foraging to locate prey by olfaction. They exploit very systematic search paths.

Auffenberg also includes numerous anecdotal observations on a wide variety of behaviors and a great deal of valuable information on many other subjects, including various aspects of both external and internal anatomy, color patterns, climate and microclimate, burrows, daily activity patterns, thermoregulation, competition, parasites and predators, geographic distribution and variation, habitats, seasonal variation, and reproductive activities. Over their wide geographical range from Pakistan through southeastern Asia, these monitor lizards experience climates ranging from desert to rainforest. Individual Bengal monitors range over extensive areas (a daily foraging path can exceed 400 meters) and consume large numbers of a wide range of relatively small prey items, mostly arthropods.

My biggest complaint about Auffenberg's presentation is that averages are often reported for various kinds of data without sample sizes, making it impossible to combine his data with other data to calculate grand means.

Auffenberg's three books constitute exceedingly valuable reference material for students of these magnificent creatures.

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Interfacing with Bits

Being Digital. NICHOLAS NEGROPONTE. Knopf, New York, 1995. viii, 245 pp. $23 or $C32.

In the Internet Age there are plenty of people who will tell you for a fee what computer to buy, how to network your organization's microprocessors, or how to "publish on the Web." But there are very few who can tell you what it all means or why. Nicholas Negroponte, co-founder and director of the Massachusetts Institute of Technology's Media Lab, has made a career of betting on the future, and he has not often been wrong. Consider his vision of a personalized digital newspaper, an automatically filtered and edited electronic online Daily Me featuring all the news that's fit for a readership of one. For years Negroponte and his colleagues have promoted this idea; this year, the *Wall Street Journal* has announced the real thing.

Negroponte's book is a collection of essays on such matters as the difference between publishing à la Gutenberg, where atoms in the form of paper are shipped around the world (like the journal you are reading), and the digital multimedia world in which bits are transmitted, stored, copied, and retransmitted at light speed for a fraction of the cost. In such a world, what is the meaning of copyright and what added value do publishers provide? Negroponte's answers are surprising and thoughtful.

Or what about the information superhighway that increasingly looks like a multiple-vehicle car wreck, with terabits of unsorted, uncataloged information all free for the taking? Negroponte's answer is intelligent agents, software tools programmed with a model of what their owners want, relentlessly roaming the Net to bring back the goods and leave the dreck behind. Con-