

Book Reviews

Book Review Editor's Note: We are continuing to use the current currency codes. Thus Canadian dollars are CAD, U.S. dollars are USD, Euros are EUR, China Yuan Remimbi are CNY, Australian dollars a AUD and so on.

ZOOLOGY

Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding, Sixth Edition

Edited by Brian I. Crother. 2008. Society for the Study of Amphibians and Reptiles Herpetological Circular 37. 84 pages. USD 12.00.

This slender volume resets the standard for scientific and English ["common"] names to current usage for all amphibians and reptiles recorded for North America (Canada and the United States) and is the official list for all three major herpetological societies based in the United States (The Society for the Study of Amphibians and Reptiles, The American Society of Ichthyologists and Herpetologists, The Herpetologists League). It is the product of a committee of prominent herpetologists consisting of Crother (chair), Jeff Boundy, Frank T. Burbrink, Jonathan A. Campbell, Kevin de Queiroz, Darrel R. Frost, Richard Highton, John B. Iverson, Fred Krus, Roy W. McDiarmid, Joseph R. Mendelson III, Peter A. Meylan, Tod W. Reeder, Michael E. Seidel, Stephen G. Tilley, and David W. Wake. This sixth edition is the second for which this committee has been responsible. The first was in 2001 (SSAR Herpetological Circular 29) and is now available on the web (<http://www.ssarherps.org/pdf/Crother.pdf>). It was reviewed, together with some historical background on the evolution of the list, in *The Canadian Field-Naturalist* 116(4): 656-658 (2002).

After a one-page introduction and acknowledgments, the text is divided into sections: Anura – frogs: Frost (chair), McDiarmid, Mendelson; Caudata – salamanders: Tilley (chair), Highton, Wake); Squamata – lizards: de Queiroz (chair), Reeder; Squamata – snakes: Crother (chair), Boundy, Burbrink, Campbell; Crocodylia – crocodylians (Crother); Testudines. Turtles: Iverson (chair), Meylan, Seidel.

There are some major changes from the previous edition that affect the scientific names of many Canadian species. The majority of these involve the long-overdue breakups of large genera distributed over more than one continent into groups of their most closely related species. This had been long-delayed because previous piecemeal changes of small segments were not generally adopted due to the lack of an overall revision. This was finally overcome by the publication of a comprehensive synthesis for world amphibians by

Frost et al. in 2006 (Bulletin of the American Museum of Natural History 297).

For toads (*Bufo*) and typical frogs (*Rana*) this has meant major shifts to unfamiliar genera. All strictly North American toads now are designated *Anaxyrus*, including the five (or four, depending on what species concept you follow) Canadian species. All the *Rana* except a few western species become *Lithobates*. This necessitates changes in the termination of some species names to agree in gender with this genus (*Lithobates catesbeianus*, *Lithobates sylvaticus*). The western species which occur in Canada that are retained in *Rana* are *R. aurora*, *R. pretiosa*, and *R. luteiventris*, because they are more closely related to the Eurasian species in this genus than to other North American frogs. Two genera are recognized for spadefoots with the two species reaching Canada both placed in *Spea*.

Other generic changes accepted which affect the names for species which occur in Canada include *Plestiodon* for skinks formerly included in *Eumeces*, and *Pantherophis* for the North American Ratsnakes, formerly included with the Eurasian *Elaphe*. However, not included are changes in a later study which combined the Ratsnakes with the Bullsnakes and Gopher Snakes in the genus *Pituophis*; or another study that retains the latter genus in its traditional sense and erects separate genera for the Ratsnakes and the Fox Snakes. In turtles the breakup of the genus *Clemmys* leaves it with only *guttata* while the Western Pond Turtle is placed in the genus *Actinemys* and the Wood Turtle in the genus *Glyptemys*. The genus *Opheodrys* is retained for the Smooth Green Snake rather than following a proposed change to *Liochlorophis*.

On the species level, two species of *Ascaphus* (tailed toads) are recognized and the western populations of the Tiger Salamander are elevated to species status as *Ambystoma mavortium*, but the later move is still controversial. In the rattlesnake genus *Crotalus*, the pacific and the prairie forms are regarded as species, *C. oreganus* and *C. viridis*. The species *Hypsigena torquata* has now been restricted to Mexico, so the form ranging into British Columbia, the Desert Nightsnake, is now *Hypsigena chlorophaea deserticola*.

The book concludes with a section by Klaus on alien (introduced by humans) species: 6 anurans, 54 lizards, 4 snakes, 1 crocodylian, and 2 turtles, the majority of these established in Florida or Hawaii. Of all these newcomers to North America, only one is in Canada, a European lizard on Vancouver Island. Checklists can only reflect the state of knowledge up to press time and how rapidly they become outdated is a direct reflection of how active and innovative current research is in the field they cover. Taxonomy and phylogenetics

in herpetology have enjoyed explosive growth in recent decades and will continue for the near future at least. This checklist cannot be the last word in species status and relationships, but is an essential authoritative benchmark for naturalists' and conservationists' reference now.

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Arctic Fox: Life at the Top of the World

By Garry Hamilton. 2008. Firefly Books Ltd., 66 Leek Crescent, Richmond Hill, Ontario L4B 1H1 Canada. 231 pages. 39.95 USD.

Garry Hamilton has produced a wonderfully written account of a whimsical predator that's not as well researched as some of the more charismatic canid species. He has gone to the source to obtain the most accurate and reliable information: the biologists and graduate students that ventured to the circumpolar region and studied the fox first hand. These interviews and summations of their research provide an added edge that is lacking in today's natural history writing.

The book is divided into three parts: Origins, Adaptations, and Change, with each part containing several chapters. Each chapter covers a particular aspect of Arctic fox biology and is accompanied by outstanding full-color photos by photographer Norbert Rosing. Hamilton uses the stories told by researchers to make various points about the amazing ecology of the Arctic fox and incorporates the journal writings of fox hunters, explorers, and early naturalists that lived within the Arctic fox's realm. With these stories and writings, Hamilton paints a picture of a fox that is a master of conserving energy, is a clever hoarder of goose eggs, and is bold enough to follow polar bears (*Ursus maritimus*) to take advantage of the seal carcasses left behind. Indeed, the most striking aspect of Hamilton's writing is his ability to communicate the adaptability of the little fox, from reproduction to the constant struggle in obtaining food.

When I first saw the book, I assumed it was some sort of coffee table tome – it measures 28 × 22 × 2 cm and is not something easily carried around. However, once I began reading, I soon realized that it was a very well researched book that contains nearly everything currently known about the fox. In short, it is a thorough species account of the Arctic fox, and exceeded my initial expectations.

I was most interested in finding out exactly where the Arctic fox came from. Chapter 3 delves into this question, explaining that it is a result of rapid evolution 200 000 to 400 000 years ago from the swift fox (*Vulpes velox*), which occurs in the Great Plains of the United States stretching from Texas to Canada. Hamil-

ton explains the evolutionary mechanisms and the pressures of natural selection with ease, providing a classic example of adaptation and survival.

The final chapters provide a cautionary statement regarding Arctic fox conservation. One would think that a fox as adaptable as the Arctic fox would not be in jeopardy. But this is not necessarily true. Global climate change is likely to thrust the fox into a state of peril. But other landscape-level challenges are becoming more of an issue. The northern expansion of the red fox (*Vulpes vulpes*) may be driving some populations of Arctic foxes to extinction, especially those in northern Europe. Hamilton explores these inter-specific interactions as well as the lemming cycles and other variables that continue to keep the Arctic fox in survivor mode.

There was only one major error in this book—the use of the Latin name *Alopex lagopus* for the Arctic fox. Whether this is a remnant of past research or the inability to change the name because of publication schedules, it is an unfortunate oversight in a work that is so rich with detail. The 3rd edition of *Mammal Species of the World: A Taxonomic and Geographic Reference* (Wozencraft 2005) places the Arctic fox with the rest of the vulpine foxes, *Vulpes lagopus*. This is mainly due to recent genetic work that proves a close relationship with the swift fox, as mentioned above.

Hamilton's book is a must for those interested in carnivore ecology, and seeking a volume detailing the Arctic fox's struggle within the brutal frozen habitat north of the Arctic Circle. Hamilton states, "...we have come to praise and not to bury our most worthy emperor of the north. Its days are far from done. Indeed, there is only one way in which we could possibly view this most remarkable of creatures – as shining examples of life's ability to survive" [page 216].

Literature Cited

Wozencraft, W. C. 2005. Order Carnivora. Pages 532–628 in *Mammal species of the world: a taxonomic and geographic reference* Edited by D. E. Wilson and D. M. Reeder. 3rd edition. Johns Hopkins University Press, Baltimore, Maryland.

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The Inner Bird – Anatomy and Evolution

By G. W. Kaiser. 2007. UBC Press, University of British Columbia, 2029 West Mall, Vancouver, British Columbia V6T 1Z2 Canada. 386 pages. 85 CAD. Cloth.

Although not as richly illustrated as Feduccia's 1999 book on bird evolution, Kaiser's book is an up-to-date summary of the evolution of birds, including both sides of some of the debates in the field. As its title suggests, the book has little to do with plumage. Only one chapter discusses feathers at any length, presumably because plumage has contributed little (though ever-increasing amounts) to our understanding of bird evolution, relative to the bones, and now the use of DNA. It is the bones that dominate the other chapters, with only passing discussions of soft tissue systems like gas exchange, muscle and digestive.

The book is well organized from basic skeletal anatomy through the dinosaur-bird integrate, to adaptations of birds which allow them to exploit different environments. The chapters of the first section, *What is a Bird*, provide a good anatomical background to the understanding of the future chapters on avian evolution, as largely interpreted by the bones of the fossil record. The author also draws parallels between the extant and the extinct, helping to infer how the latter lived. There is plenty of space devoted to comparing and contrasting birds with dinosaurs.

The frequent references to the primary literature (and a correspondingly large list of references), suggests a thoroughly-researched work. Having said that, there are more than a few (but not a lot of) factual errors. For example, the author claims that feathers are not evolutionarily derived from scales, but hair is; in reality, the reverse is largely considered to be true. Semicircular canals, despite being part of the ears, have nothing to do with hearing, as the author suggests. Double-headed ribs are not unique to birds and dinosaurs, they are widely distributed among the tetrapods. Most of the errors I found were anatomical — it's not clear to me if the cause of this is that the author is a seabird biologist who does not specialize in anatomy, or the reviewer is a specialist in anatomy, and therefore wasn't finding errors in other components of the book which lay outside his specialty.

Seabirds: A Natural History

By A. Gaston. 2004. Yale University Press, [Christopher Helm], P.O. Box 209040, New Haven, Connecticut USA. 210 pages. 45 USD.

Canadians should notice the publication of this book: Since seabirds tend to be good indicators of the ocean environment, they represent how the three Canadian oceans are dealt with. The author, a leading employee

This book fills several gaps in recent ornithological literature. Ornithology textbooks of today, unlike the not-so-distant past, do not spend much space on skeletal anatomy, and when they do, the accounts are largely restricted to the chicken as the typical example. So much of the wonderful variation of avian osteology is described in Kaiser's book, that all researchers could be inspired here. However, it would take a multivolume series to fully explore this field. There are several places in this book where another diagram or two would really help the reader understand the structures being described in the text.

The second section, *What kind of bird is it?*, does as much, as any review book can, to survey the complex evolution of birds from dinosaurs, and the subsequent radiation into their more restrictive clades. Convergence is always a problem to deal with, and has been addressed. Several cladograms are presented, some based on physical characteristics, some, as is the trend, based on DNA. Additionally, there is a lot of discussion of other taxonomic research whose cladograms are not re-illustrated in this book. Given the amount of space allotted to avian evolution, the author has managed to cover the breadth of the topic quite well.

The third section of the book, *How does a bird fly?* takes us from a chapter on feathers and feathered dinosaurs (the shortest chapter in the book) through to adaptations that allow birds to exploit terrestrial and aquatic habitats (with a look at both aerial surface-foragers and diving marine birds). It presents unresolved conundrums such as why loons and grebes fly at considerable height over water, whereas murrelets and cormorants (among others), fly just over the water's surface. These conundrums help to create a book of intrigue, not just one of facts.

Birders will be fascinated with this book as it is written in a language that they will be able to appreciate; ornithologists will find enough detail to satisfy and stimulate them as well.

Literature Cited

Feduccia, Alan. 1999. *The origin and evolution of birds*. Yale University Press, P.O. Box 209040, New Haven, Connecticut. 480 pages.

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with the Canadian Wildlife Service (CWS) of Environment Canada, presents us with his life's work summary of what seabirds are like, and how they fit into the world. It makes for a challenging book on a complex topic.

The text of 222 pages makes usually for a rather delightful naturalist reading, but it falls short on most relevant conservation management issues citizens are

concerned about. This has been the profile of the Canadian government for decades, and it is nothing a Canadian can be really proud of, or be happy with.

The author has tried to provide us here with a "Naturalist view" on seabirds. Not taking on responsibility that comes with scientific knowledge and being in a high-ranking governmental research position, he tries kindly to retreat into telling "amazing stories" about seabirds (relevant statistical analyses are virtually lacking) and to promote the idea of an "objective" expert science (one that is mostly funded by taxpayers). It blurs the lines because the entire lack of any reference to by-catch, overfishing, (chronic) oil and plastic pollution, and even climate change (topics known for over four decades and globally discussed these days) shows us how wrong this concept from the 1960s has drifted by now: in the wider view of things, such a profile basically makes for a subsidy destroying Canada's oceans (and its seabirds) even further (e.g., Bandura 2007). Evidence comes from the well-knowing author who states that large seabird populations must have existed prior to contact with the (western) human race. He also gives a faint hint that the wrongly assigned and outdated mandates of CWS (looking after seabirds) and the Department of Fisheries and Oceans (Canada) (DFO; looking after fish and the oceans overall) need an urgent revision towards a more meaningful and sustainable concept.

In the elaborate 10 chapters, Gaston presents his assembled expertise, covering "the gamut of seabirds" with topics as diverse as Seabird Types, Adaptation, Plumage, Distributions and Communities, Feeding Behaviour, Migration and Movement, Breeding, Coloniality and Its Consequences, Birth and Death Theory & Observations. An Afterword, a Bibliography and an 11 page Index conclude this compact little book on seabirds of the world with 50 figures and 13 tables. The publication is rather nicely illustrated with photos, colour plates and drawings in black/white by D. Powell, J. Chardine, T. Lash, the author's wife and others.

"Thick-billed Murres may not be the wisest birds in the world" so why study them for your life, and put entire government budgets behind them at the cost of other (more important) things? Gaston never really justifies this question crucial to Canada, but promotes marine ornithology being an interdisciplinary science. He criticizes, correctly, that "seabirds never received much attention from marine biologists." His book is "Looking at seabirds on a global scale" (although Gaston seems to lack relevant seabird experience in the Antarctic, Russia and the pelagic ocean).

The taxonomy presented in this publication shows no source, and comes from the early 1990s. But as a seabird biologist, biological oceanographer, birder and naturalist, you still want to read this book. This is because it is strong on the brainstorming and intellectual side; e.g., density-dependence vs food shortage, and life history questions. Gaston stuns us with conclusions like Emperor Penguins, albatrosses and large petrels would

be more similar in their demographics than pre-agricultural humans. He cites Sindbad the Sailor, and some rather funny text sections are found. The sea is a good place to survive, but a poor one to reproduce (because eggs do not float). Perhaps that's why "Compared with terrestrial birds, there are relatively few species of seabirds"? This publication shows that seabird diversity is higher in the southern hemisphere: the highest number of breeding species occurs on the Crozet archipelago.

Classic seabird concepts carried over from the good old British seabird science days in Oxford and from others (e.g., Murphy, Wynne-Edwards, Lockley, Lack, Nelson, Nice, Cairns) can be found throughout the chapters, e.g., Ashmole's Halo, Hungry Horde and Information Theory where to find food (widely dismissed in animal behavior textbooks though). Readers will learn in some rather fascinating text sections whether birds walk or hop, whether there is territoriality at sea, what the effects are of buoyancy in diving seabirds, how Kleptoparasitism evolved, what chick obesity is, "What is a Colony", whether eye size is a limiting factor in underwater feeding, why seabirds are not smaller, why the U.S. Navy picked colors for their warships matching the plumage of the Antarctic Prion, that most seabirds have a long neck (but a small hindtoe and short tail), whether they can smell, whether "reciprocal altruism" exists in seabirds, how white wing tips and related feather pigments attract flocks, that seabirds can drink saltwater, have feathers for isolation, why they have beak and face ornaments in burrow-nesting seabirds, how foraging range is related to life history, the impact of aspect-ratio for wing loading, that auklets have one of the most unusual songs and that Wandering Albatross take 20 years to develop a mature plumage. Gaston makes a good point that there has been no relevant progress in bird navigation studies for virtually 100 years.

I further liked his hypothesis that the presence of Bald Eagles precludes the existence of Common Murres in the Northwest Pacific, that colony locations existed for thousands of years affecting colour morphs (e.g., in fulmars), and that sharks would generally limit predatory behavior in the tropics. Other fascinating questions deal with diving behavior, why are there no tubenoses in Indonesia, whether seabirds would be "among the most weather-dependent of birds", are chicks at smaller colonies better fed, and do "leks" occur in seabirds; e.g., for Razorbills on boulders? Interesting for biogeographers is the section on "Convergence and Co-Evolution" analysing three boundary upwelling zones (California, Humboldt and Benguela Currents) and their avian communities and endemics.

Gaston's writings on colony-related questions, are obviously strong, specifically for Thick-billed Murres and Ancient Murrelets (basically his life-long pursuits). The spectacular breeding displays of seabirds are not "overly" covered. But readers will appreciate the review of seabird wrecks and irruptions, and find the provid-

ed overview tables and maps very useful (e.g. islands where the world's endemic seabirds are found).

Seabird dispersal and migration is covered in informative detail (e.g., for phalaropes, jaegers, Bonaparte's and Sabine's gulls). Regarding telemetry (a big topic in seabird research these days), resource selection and biomass/prey models, this book is a disappointment. Also no work is presented that involves Geographic Information Systems (GIS) or online mapping initiatives. The book presents monogamy and seabird mating systems, but lacks the exciting findings on Extra-pair Copulations (EPCs), as well as on Stable Isotopes (e.g., Canadian flagship work by K. Hobson) and on the Wilson's Storm Petrel (probably the most abundant bird in the world). The author is also plain wrong in his statement that our ability to predict hot-spots for seabirds would be poor (accuracies of over 80% are reported in the literature). But he is absolutely right that many pelagic seabird colony, survey and distribution data are still unpublished and not publicly available, blocking progress on the world's seabird research and management (examples are found for the Arctic, Antarctic, Indian Ocean, with BirdLife International and many of the surveys involving funding from the U.S. National Science Foundation, ICES and PICES for instance).

Being a naturalist and a modern scientist can mix, beyond log-transformed linear regressions. And so, it's too bad that the demography chapter ends with literature of the late 1980s (whereas a real explosion has happened in this discipline in the last two decades making for a main scheme in colony-based seabird research and management). One should always be doubtful when facts in biology get presented as "it makes sense that" (as done in this book).

Another serious omission is that Gaston does not make reference to another major reference on seabirds by Schreiber and Burger (2002), nor to the extensive works by Nettleship or Montevecchi (or the classic papers on smell by Newell). Since the author is being an international editor for seabird journals, one won-

ders why that is? Citation biases are definitely not professional. The tragedy here is for Canada and its seabirds that the Gaston style equals more or less the CWS style (instead of for instance, Anderson et al. 2003).

Compared to other disciplines, it is striking that so little real progress has been made on seabirds and their habitats and management ("Seabird ecology does not provide many Eureka! moments"), when considering the chronic oil-spill situation in our oceans, overfishing in Newfoundland and elsewhere, and that 17 out of the 19 albatross species are basically of major conservation concern (two species occur in Canadian waters). Considering the impacts of climate change, the times for story telling and of a science that "objectively" gets removed from adaptive management is probably over, certainly for seabirds in the Arctic (a topic Gaston is an expert in) and where we are facing a warming of 8 degrees Celsius.

Overall, we are left here with a nice Gaston-style publication and his views as a self-defined CWS naturalist, but naturalists of this world do cover much more ground and are usually rather concerned about sustainability. A more serious book about seabirds and their habitat, management and conservation — beyond just interesting stories and facts — still awaits to be written so that Canada can be proud again of its traditionally well-balanced values, (governmental) research and an ocean science that truly achieves, long-term.

Literature Cited

- Anderson D. R., E. G. Cooch, R. J. Gutierrez, C. J. Krebs, M. S. Lindberg, K. H. Pollock, C. A. Ribic, and T. M. Shenck. 2003. Rigorous science: suggestions on how to raise the bar. *Wildlife Society Bulletin* 31: 296-305.
- Bandura, A. 2007. Impeding ecological sustainability through selective moral disengagement. *International Journal for Innovation and Sustainable Development* 2: 8-35.

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BOTANY

Monograph on Bamboo in China

By Yi Tongpei, Shi Junyi, Ma Lisha, Wang Haitao and Yang Lin. Science Press, Beijing, China. 2008. 766 pages, 480.00 CNY Cloth.

In phytotaxonomy, bamboo are monocotyledon woody perennial evergreens (except for some temperate species) plants in the family Gramineae (or Poaceae), subfamily Bambusoideae, tribe Bambuseae. According to the statistics, worldwide totalling more than 70 genera and 1200 species of bamboo covers a total area of about 22 million hm². Bamboo is distributed between the Tropic of Capricorn and the Tropic of Cancer, covering the tropical, subtropical and warm

temperate areas. China, especially the southern part of China, is located in the central distribution area of bamboo. Bamboo in China has 39 genera and 509 species, which is 36% and 39% of the total number of genera and species of bamboo in the world, respectively. Bamboo area in China is about five million hm², which is 4% of the total area of forest in China, and 25% of the total bamboo area in the world.

Early in the period of Yangshao and Hemudu Cultures, about 6000-7000 years ago, the Chinese began to use bamboo in their daily lives and production activities. In China, bamboo has been extensively used in

many aspects, such as source material for clothing, food, housing and transportation. Before the invention of paper-making technique in the ninth century, many important Chinese ancient books, such as the books of Confucius, were all written on bamboo slips. In a sense, bamboo has become a carrier of Chinese civilization. It might be said that if the discovery and use of corn created the splendid Indian culture and history, the use of bamboo created the prosperous civilization and history of China.

In traditional Chinese culture, the straight lines, nodes, hardness and hollow structure of bamboo symbolize the resilience, integrity, unselfishness, resoluteness, honorability, chastity, tenacity, mettle, longevity, condescension, abstention, truth, happiness and so on. Besides being a symbol of virtue, bamboo is endowed with soul and emotion. Chinese not only like the practical uses, but also the spirit of bamboo. Bamboo is sometimes regarded as an indispensable part of daily life by Chinese; this was expressed in the poem of a famous Chinese poet Su Shi in the Song Dynasty, that "I prefer to eat a meal without meat, not to have a home without bamboo." Bamboo is rich in cultural connotations and has influenced and promoted the formation of the sense of aesthetics and ethics of Chinese people, as well as the development of Chinese literature, painting, arts and crafts, garden art, religious culture, folk-custom and music culture (bamboo is an important material for making musical instruments in China). Because bamboo possesses uniquely beautiful and elegant stance as well as the abundant spiritual symbolization, from ancient times, bamboo as a important garden plant has been using widely in landscape design in China. Bamboo, pine and plum are regarded as three best friends or auspicious plants in winter. Additionally including chrysanthemum, they are called the four gentlemen of plant kingdom.

Although the bamboo resource is abundant and the history of use of bamboo is long enough in China, a comprehensive book dealing with Chinese bamboo resource has been rare. The book *Monograph on Bamboo in China* written by Yi et al., comprehensively re-

flected the latest research results on bamboo resource in China.

The book contains large numbers of Chinese species and a small number of introduced bamboo species, totalling 43 genera, 707 species, 52 varieties and 98 variants in Bambusoideae, among which there are more than 1910 pieces of color photos attached to 440 species, 36 varieties, 68 variants and 4 hybrids. Some of these photos were taken in many botanical gardens and bamboo gardens in China, and most of the others were taken in the natural sites where the model specimens originally grew. The morphological characteristics, origin, habitat and elevation of distribution of each species are described in detail. Abundant first-hand information is included in the book. Many data in the book were published for the first time, for example, the photos of more than 300 bamboo species (including the varieties and variants) in their original sites, and the photos of some single-species genera of bamboo. In the book, an elaborate identification key containing all bamboo species in 34 genera except for the species in the single-species genera and there is a map of the distribution of cold-resistant bamboo species. Furthermore, the book collected and listed almost all the original literature published about the newly found bamboo species after around 1996.

The book is well structured, and with few errors. The book has a strong scientific and practical values. Its publication will promote the research, exploitation, protection and management of the bamboo resource in China. This book can serve as a reference for persons who engage in phytotaxonomy, agriculture, forestry or other related fields, or the persons who are interested in bamboo.

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ENVIRONMENT

Tree of Rivers: The Story of the Amazon

By J. Hemming. 2008. Thames & Hudson Inc., 500 Fifth Avenue, New York, New York 10110 USA. 368 pages. 39.95 USD.

The environmental history of the Amazon has a new amazing book, and any naturalist interested in natural world heritages really wants to read it: it represents environmental history *par excellence*.

Most people don't appreciate that the Amazon River provides the cradle for our current western world's industrialization, and that we owe it. Holland's Golden Age, for instance was caused, in part, by sugar from

Brazil. Portugal's period of great wealth 1750s onwards was due to the inflow of gold discovered in Brazil (Minhas Gerais). And 1850 started "the world's greatest boom based on a living plant product", rubber (*Hevea brasiliensis*) and Castilla trees. It was exploited and its use intensified by T. Hancock (father of the international rubber industry), Dunlop, MacIntosh, Firestone, Goodyear (famous for inventing vulcanization), Michelin (France) and Ford (also known for its rubber plantations). A reference to a similar situation in Congo and the Belgium king is made, too. Further,

Amazonia was exploited early on for “drogas de ser-tao” (drugs of the wild: curupa powder, cacao, coffee, sugar and butter oil from turtle eggs; petroleum was not yet available).

The author selected 70 illustrations and 20 beautiful photos for this impressive book. Thematic maps allow for an overview. Definite strengths of this book are the details on early Portuguese and Spanish explorations. Sources from great chroniclers (e.g. G. de Carvajal) make for nicely rounded presentations. The 11 chapters of this publication show that beyond Portugal and Spain, many countries took part in the early exploration of Amazonia and making their claims; e.g., England, France, Germany, Russia, Austria, Belgium and the United States (this situation reminds us of Antarctica today). Exploring this vast area was only possible due to native paddlers doing all the work. The indigenous populations lived very successfully in the region for thousands of years and they had wealth without a relevant government! Tribes such as the Yanomami, Omagua, Mura, Mundurukuru, Nambiquara, Karaja and Canari are well covered (speaking languages such as Arwak, Carib and Tupi, as the Amazonian *lingua blanca*). The sophisticated *roca* farming and native pottery are elaborated on. The pacification process of the infamous Parintintin tribe is explained, and it is striking to learn that once tribes got contacted and made peace with, e.g. by the Brazilian government or anthropologists, they usually died out quickly (often due to diseases).

The Amazon represents a botanical wonder trough, and famous botanists such as R. Spruce (the greatest botanist of his century and who made the first western experience with cocaine, caapi, yopo and anaesthetics), A.R. Ferreira (whose collection in the Lisbon museum was later re-located to Paris, thanks to Napoleon), H. W. Bates and A. R. Wallace are given much attention. C. Waterton got described as the first environmentalist for Amazonia. With Amazonia being also the world's biggest freshwater fish reservoir, it makes for “the largest river in the largest forest”. It becomes clear that the Amazonia region matters globally because of Greenhouse Gases, Loss of Biodiversity and Global Warming (the term Ecological Services is not mentioned by the author though). The Amazon river has uncountable “Wagnerian waterfalls”, but its lower 2200 km are sailable right into Peru and make for an international waterway (a legal situation set up through political pressures by the U.S. and Britain). The eastern Andean slopes carry the world's richest biodiversity, and the Amazon basin represents nothing but the world's largest canopy cover, having 427 mammal species (but lacking large mammals like in Africa). Hemming explains that 90% of the animal biomass is actually from insects (the entomology section of this book covers only 1.5 pages though). We learn from the author that termites play a major role in the climate change discussion due to their methane release. For

Amazonia, 30 000 tree species are estimated, and 300 species per hectare can occur (A. Gentry's botany work remains unfortunately unmentioned). The highest known concentration of hallogenetic plants is located in the upper Amazonia (Sibundoy); related work by R. Evans Schultze from Harvard (the father of ethnobotany; a concept now widely exploited by pharmaceutical companies) is discussed.

Often overlooked elsewhere, the 368 pages of this book nicely emphasize relevant historical treaties (Tordesillas, Madrid, San Ildefonso, Peace of Paris, and Petropolis). Further, we learn that “Napoleon's invasion of Spain and Portugal had a profound impact in South America”, e.g. the Portuguese Royal family retreated to Rio Janeiro, and Brazil developed accordingly. The wealth of Manaus in its heyday due to the global rubber boom is also described in depth (including its opera house *Teatro Amazonas*, and electric trams).

But the Amazon of the last 500 years carries also a history of sexual abuse: “*the gloom of the forest*” “brings out the worst instincts of man, brutalizes the affections, hardens the emotions, and draws out with malign and terrible intention every evil and sordid lust”. An entire chapter is devoted to Cabanagem (a local rebellion and revenge against the Portuguese General Company of Commerce resulting in large-scale brutalities and atrocities; it is named after local migrant workers). Many of the sheer brutalities against the natives manifested themselves in the rubber trade. The ones related to the rubber baron J.C. Arana get a chapter of their own, and how W. Hardenburg and W. Perkins exposed single-handedly the human rights violations against the Witoto and Bora tribes in Putumayo. The double standards England played in this context are outlined, too, along with the role of the English Amazon Company. Malaria is basically man-made in South America (probably brought over from Africa from the 16th century onwards by the African slaves and Europeans). Other classic diseases such as beriberi and chagas are mentioned in most chapters. A massive depopulation of the Amazonian river banks was already reported by 1750.

Further, this book is teeming with breathtaking stories about explorers, historical figures, and the cruel colonial history. Five German anthropologists are also given some detail, as well as C. Uncle, the most influential anthropologist of the early 20th century, as well as the Boa Villas brothers. One achievement of their work is that the Xingu tribes can now obtain Brazilian medical treatment. The recent feud centered on the “wonderfully rich varzea” between American anthropologists B. Meggers and A. Roosevelt is outlined. The author has visited many Amazonian tribes himself and is uniquely qualified to put explorations into a native context. And so, a good balance is achieved in this book because it also reports on the infamous Inka and modern native leaders.

The author makes a great case that Europeans did not manage to live sustainably on the land of Amazonia (or elsewhere really). Impacts of the huge but failed investments by American tycoons such as H. Ford in 1927 ("Fordlandia and Belterra"; pioneered by the U.S. Dept of Agriculture and Commerce in 1923) and D. K. Ludwig (1966; softwood and pulp plantations, planned for the world's biggest rice plantation and cattle ranch) are explained. Other American influences in the region are also well described, such as the U.S. attempt to influence Bolivia's rubber region near Acre (controlling 60% of the world's production).

The reader will be further fascinated by the history of the 'Red Bark Tree', Cinchona, with the fever bark "that contained the quinine palliative for malaria". C. Markham's involvement in the famous malaria medication, quinine (which got extracted as an alkaloid in 1820 by a French chemist) makes for a great read. The Cinchona trees were to be transplanted from South America to India helping to heal the Indian army suffering from malaria. But Peru did not allow the export of the plant because it did not want to lose its valuable monopoly. It was R. Spruce who defeated somewhat illegally the South American countries for the British Commonwealth and with help from Sir W. Huxley from the English Kew Botanical Gardens.

Amazonia represents the lungs of the world. Another fascinating topic deals with the modified forests in Amazonia, such as planted palm trees for the acai fruit (*Euterpe oleracea*) as the world's most complete natural food. Timber makes for another precious product, specifically Mahogany (Swietenia; with every tree harvested 27 other trees get destroyed). We learn from this book that in 1997, 80% of the logging was illegal, and that selective logging is not working. These things were exposed by A. Cowell's famous work *The Decade of Destruction* exposing the "appalling deforestation, lawlessness and environmental mayhem of the 1980s". Further global awareness of Amazonia's problems were brought by Landsat satellite imagery, and work promoted by NOAA, INPE (Brasil's Space Research Institute), Amazon Research Institute (INPA) and FAO. The World Bank claims an overall 12% loss for Brazil's rainforest (Brazilians lower that estimate to 7%). By now, Amazonia's map shows a bizarre and wide network of reserve systems. Three main reasons for reserves are given in the book: to boost tribal morale, because indigenous people are good custodians of their own land, and because the reserve areas encompass most of the 40 un-contacted tribes.

Brazil is already the world's leading beef exporter. A less known, but equally big problem, is the huge soya-bean plantations. It's a phenomenon brought by high living standards and strong demands, specifically from India and China. The world's wealthiest soya producer, the governor of Matto Grosso, recently built a highway connected with a deep sea port (done without a relevant environmental impact study). Hemming

reports the involvement of U.S. companies such as Cargill.

Brazil was never short of development plans (slogan by politicians: "land without people for people without land"). Hemming concludes in another chapter that the plane, chainsaw and bulldozer did no good for the Amazonian environment. Famous roads and their negative impacts (e.g. Arc of deforestation near BR-10/153 and BR-364) are described. The largest oil find in the Amazonas basin (1964 by Texaco) is explained (but not the recent pipeline issues and that Ecuador became virtually bankrupt). For decades, China and Japan have been asking for access to Amazonia's wealth from the Pacific side. Brazil's latest development plans include the construction of 80 hydroelectric dams (often used for the provision of electricity to mines). The world's largest iron-ore deposit is located near the Xingu river (I think ALCAN gets away in this book with a way too positive image for its impacts). Protective plans for the Amazon such as the Pilot Program to Preserve Brazilian Rainforest PPG7 (set up by the G7 nations), the Sustainable Amazon Plan (PAS) and the System for the Protection of the Amazon (SIPAM) never halted the forest destruction.

When it comes to biology, biodiversity and wildlife management though, the text sections are less strong. This book is rather short on the liberation theology movement. It also must come to the reader as a shortcoming that despite its huge relevance and impact, the infamous *empate* (peaceful removal of squatters), Chico Mendes, Stephan Schwartzman and José Lutzenberger are only mentioned in passing. The role that the English Kew Botanical Garden, and its leader Sir J. Hooker, plays in the brutal exploitation of the Amazon, its people and resources, is indirectly mentioned but not so much how it relates with today's discussion on Biopiracy, and why Brazil is so reluctant to share with 'the North', and is not fond of the anglophone world and is still lacking trust. The author presents a nice twist, though, by stating that Brazil's coffee industry is based on seeds from elsewhere (Africa) where some of its slave laborers came from. Further, this book does not really cover Brazilian politics well, e.g. impacts of military coups, Brazil's quasi-dictator Vargas and Funai (Ministry of Indigenous People). Also, virtually no reference is made to the huge problems with the World Bank and its destructive funding schemes promoting economic growth. The 17 pages of literature sources I do not find well referenced.

This milestone publication convinces us that the future of Amazonia is in deep trouble. One hopes it will raise awareness for a global betterment of precious natural resources and landscapes, in Amazonia and beyond.

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Plains Apache Ethnobotany

By Julia A. Jordan. 2008. University of Oklahoma Press, 2800 Venture Drive, Norman, Oklahoma. 212 pages. 34.95 USD. Cloth.

Plains Apache Ethnobotany is a delightful book by retired anthropologist Julia A. Jordan. Based on graduate fieldwork she conducted in the mid-1960s in Oklahoma, the book is dedicated to the memory of the Apache elders she and other students worked with during that period – people with whom she developed a working relationship “interlaced with humour and laughter,” as well as apparent mutual respect and cooperation.

The introduction, where Jordan describes the fieldwork and portrays the elders, is one of the most engaging parts of the book. She introduces Ray Blackbear, who was raised by paternal grandparents from whom he learned the history and folklore of the Apache, as well as details on finding and using native plants. He used to tease Jordan unmercifully about her pronunciation of certain Apache words. Louise Saddleblanket, the daughter of a respected Apache medicine man, pierced the author’s ears with a long, carefully selected prickly pear cactus thorn.

Fred Bigman, who lived near the students’ quarters, would never fail to arrive at 7:00 a.m. for his 8:00 a.m. interview, sometimes accompanied by his wife. Sitting quietly in the kitchen, smoking, drinking coffee, and making small talk, he gave the impression that watching the field school students wake up was a favourite pastime. Rose Chaletsin, a woman of property and stature, was an accomplished storyteller who agreed to tell some of her stories during the summer field season, even though the traditional storytelling period is winter. When the recorded stories were played back, the author reports, Chaletsin laughed heartily. Those personal touches set a pleasant tone for the rest of the book.

Part One, “The Plains Apache,” includes a chapter on Plains Apache history and culture, including the earliest known history of the tribe, nineteenth century developments, the reservation and allotment periods, and finally the twentieth century. The chapter on the Plains Apache plant world was particularly intriguing. I discovered, for example, that plants were not conceptualized by the Apache as distinct entities and that the Apache world view did not divide nature into, for ex-

ample, animal, vegetable and mineral kingdoms. The Apache language, writes Jordan, has no equivalent for the English word “plant.” The Apache also conceived of plants as existing in pairs: the “real” plant and an imitation or imitations that resembled the real plant but did not carry its particular properties. Wild bergamot (*Monarda fistulosa*), for example, has imitators within members of the same genus (*M. punctata*, *M. citriodora*) that do not carry *fistulosa*’s highly valued scent.

Part Two, “The Useful Plants,” includes chapters on plants used for food, ritual and medicine, material culture and firewood, and personal care and adornment. What struck me about these chapters was the Apache names for these plants – names that reflect practical knowledge or humorous perception. Wild onion, for example, is called “horses won’t eat it” in Plains Apache, while black samson echinacea is named “medicine makes you numb” because it produces a numbing effect on the mouth tissues when chewed. The ram’s horn or unicorn plant is referred to as “old lady’s toenail,” while the puffball is called “coyote penis.”

In some of the previous paragraphs I have used the past tense to echo Jordan’s writing, as well as her assertion, in the concluding chapter, that although this particular ethnobotany is perhaps incomplete, it would be impossible to replicate now because the elders she worked with have passed away. With the loss, in 2008, of the last individual who could speak the language with any fluency, these “custodians of the language and traditional culture” have, in essence, died out. Nevertheless, Jordan points out, these elders left an enduring legacy for subsequent generations – from the preservation of an important part of their traditional knowledge to their belief in how plants and the rest of the natural world, a powerful and awesome force, should be approached, in the author’s words, “with thoughtful, even prayerful, respect.”

Plains Apache Ethnobotany is a well-written, easy-to-read and informative account about a different sort of relationship with the natural world. Interlaced with the personal stories, experiences and wisdom of Apache elders, it is a must-read for anyone with an interest in traditional ecological knowledge.

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Biodiversity Databases: Techniques, Politics and Applications

Edited by G. Curry and C. J. Humphries. 2008. The Systematics Association Special Volume Series 73. CRC Press, Taylor & B Francis Group, New York. 208 pages. 60.95 USD.

This book is meant to fill a gap in biodiversity, data and informatics. The subject is important for minimizing the digital divide and to make best available use of technology for reaching global sustainability,

environmental justice and increasing human and natural wealth. Not a small feat. As European expertise plays a significant role, the one-sided European view unfortunately carries throughout the book.

Regarding taxonomic and biodiversity data, the authors note that many data are not available as they are predominately published in hard copy, if at all.

The full size of the audience for such information can only be guessed, but making information freely available to China, India, Africa and Brazil would likely see impact factors explode

It's acknowledged that systematics is way behind other disciplines. But the two English editors present no real vision or underlying philosophy why we should move forward. Stopping the taxonomy discipline from crisis and decay with computers, and putting it onto the agenda appears to be a goal of this book and its 10 chapters.

This book is not well edited. The first chapter presents a great overview on the Global Biodiversity Information Facility. GBIF was basically developed through a Mega-Science Forum by the OECD, so GBIF and its data have a commercial agenda. Another chapter (5) deals with the fascinating automated insect and foraminifera identification, but it's a lengthy text. Use of OCR (Optical Character Recognition) is described. Automated tasks involving human expertise show identification reproducibilities as low as 30% or lower". This can put doubts in GBIF data, and some even claim that approximately 60% of all data on public webportals can be wrong!

Another chapter promotes the use of BioCASE (now an adopted GBIF protocol), where the data are globally linked and accessible but where the content remains with the provider. I like specifically the 24h Helpdesk for new BioCASE providers. BIOCISE and ENHSIN are also discussed (the SpeciesAnalyst or Digir platforms are virtually omitted, though). It is clear that the EU virtually has no high-quality, accepted Metadata standard. This is shocking and puts much doubt in the seriousness of the exercise and investment.

Further, the reader will not understand how the European Molecular Biology Laboratory (EMBL) connects with Genbank and with the DNA Database of Japan (DDBJ), and why the world needs different DNA databases to start out with? The Europe-based Expert Centre for Taxonomic Identification (ETI) is described in some detail, but not the global ITIS (Integrated Taxonomy Information System) database.

A key problem in the EU and its various biodiversity networks, projects and competing and fragmented funders is to share and re-use information without duplication (an identified GBIF goal). As GBIF is already located in Europe, one wonders what ENBI (European Network for Biodiversity Information) really does?

The reader interested in the front line of biodiversity will appreciate Chapter 8, which gives a nice overview of LIAS (Information and data storage system for lichenized and lichenicolous ascomycetes) and how it is used with a binary DELTA identification key.

Linking and merging biodiversity databases (Chapter 9) is an interesting and relevant topic, but this chapter lacks entirely the crucial statistical aspects.

This topic has plagued Biodiversity Database from the start and still requires resolution.

Other chapters deal with initial transition problems of the ERMS (European Register of Marine Species) database, with ILDIS (International Legume Database and Information Service), the ILDIS Legume Web, Fishbase and how it all links to SPECIES2000, and then to the infamous Catalogue of Life (linked with North America and cooperating with ITIS). The W3Tropicos database at Missouri Botanical Garden is also discussed, but not so much the Kew Garden one.

A nice point is made that internet use and performance for obtaining valid information can be described with metrics such as precision of information, rigorously correct information recall, time until information is retrieved, etc.

Chapter 10 (Priority Areas for Rattan Conservation on Borneo) makes for a key chapter for the application of online biodiversity databases (Borneo has approximately 8% of the natural vegetation remaining). An optimized area selection method called WORLDMAP gets applied to the data from the ASEAN Regional Centre for Biodiversity Conservation, and interesting data sets are presented for Borneo. It is worthwhile to note here that the EU, or countries like Germany basically, do not have such biodiversity layers for their own states! The book makes clear that relevant ecosystem data are not well represented in these online databases, and the authors kindly, but wrongly, excuse it because of "ecological complexities" (instead of political will). Unfortunately, this book also falls short in its conservation message: Tropical Forest Loss would just be excused as a "complex subject" (instead of being a simple one: just stop the promotion of economic growth and cutting trees), climate change and global warming are separate things, resources are managed by locals and carry no global rights, etc.

This book further shows how inefficient our institutionalized conservation and information management has become, and it's no wonder that our global biodiversity approach needs an entire overhaul. The Consortium of European Taxonomic Facilities (CETAF) is one of the biggest players, but it has a small role in North America. So, the global conservation responsibility of the EU is not well addressed in this book. The notion of world peace cannot be ignored in such discussions. SCAR Antarctic and International Polar Year programs make that clear (but unfortunately are not addressed in this book). What I am missing in this book is a policy and legal chapter (as one would expect from the title).

The georeferencing emphasis for the datasets is nice, but none of the standard tools recommended by GBIF are presented; nor is reference made to altitude information. The presented modeling methods are not based on standard techniques; e.g., ENFA and GARP (a global standard by now) and beyond WorldMap, no other

relevant optimization methods are explained). Instead, authors promote simple GRID arithmetic computations. Some of the presented statistical methods are modern but ignore better or similar relevant methods.

This book leaves us with a one-sided, European (mostly English and German) perspective. African, and even Chinese, Indian, Brazilian, Japanese, Russian, polar and ocean perspectives are widely left out. This book suffers from the missing North American and Australian expertise. This matters because the southern biodiversity community has not forgotten the role that the English Kew Gardens played in “biopirating” when Brazil’s rubber monopoly got lost to the Commonwealth.

Many of the URLs are very useful. And this is a strength of this book! Unfortunately, they are often promoting short-lived European initiatives, and are cited inconsistently in the chapters.

This book is not so strong on the technical and software concept. XML is mentioned well, but exact software and code details are not given, The PSE (Problem

Solving Environment) is mentioned, but work benches are hardly touched on. E-Science and GRID technology is mentioned but not how it links with GBIF and its data sources and formats. The Open Access code is not well promoted either. Another flaw is the virtual exclusion of Switzerland (being among the European leaders in biodiversity and habitat data).

It is not only that the book editors are from England, but that of the 24 contributors, virtually all are from the EU (mainly Germany, U.K. and Denmark). Such narrow perspectives are not in the best global, national, tax-payers and biodiversity interest. This book clearly shows what European national academies and scientists can produce; but it is almost a lost opportunity and we need to achieve much better if we care about our data heritage and the globe.

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Local Effects of Global Changes in the Himalayas: Manang Nepal

By R. Chaudhary, T. H. Aase, O. R. Vetaas, and B. P. Subedi. 2007. Tribhuvan University, Nepal and Uniforskning Bergen, Norway. 199 pages. 35 USD.

This book makes for a stimulating contribution to a popular global heritage site: Manang. It presents an overview of its highly dynamic mountain people, and their direct link with globalization, global climate change and the global community as a whole. The study area, located between 4000 – 7000 m altitude and presenting one of the highest agricultures in the world, covers the famous Annapurna Conservation Area.

Unfortunately, this informative book, published with strong Norwegian governmental help, goes along happily with the uncritical notion of economic growth (a scheme that by now has put most of the world in shambles). And so, the Norwegian authors state, wrongly: “There is an emerging consensus that globalization promotes economic growth and prosperity throughout the world”. Following the new style of NGO – and development aid-publications, it carries “cool concepts” and some “greenwash”, but it often lacks solid data and analysis to back it up.

The 19 contributors (12 Nepali, 6 Norwegians and 1 Canadian), describe a harsh region where contract labor is paid 1.4 US\$ per day. Because of a missing ocean nearby, the lack of selenium and iodine results in a high incidence of Kashin-Beck disease and cretinism. If agriculture declines in this part of the world, out-migration goes up, and so does tourism and the income from it.

A strength of this book is that the authors elaborate on the valuable medicinal plant harvest of Nepal and

other countries in the Hindu Kush-Himalayas (HKH) region. These studies, financially supported by the international corporation of the Volkswagen Foundation, report on over 60 different species of edible mushrooms (including *Morchella* species) for commercial export purposes. Other plant species used are, for instance, *Taxus baccata* and Kutki. “Because of the high global demand and lucrative profit – every age group – were found busy in collecting medical plants”. Such an effort cannot be sustainable. Overharvesting increases the price, and thus, the rarity of such plants, which results in a vicious cycle which can easily result in extinction (locally, and even globally).

The Himalayas have approximately 70 big glaciers, which makes for the third largest ice concentration outside of the poles. It supports rivers of global importance such as the Ganges, Brahmaputra and Indus, lifelines for millions of people. Due to man-made climate change; e.g., contamination of the atmosphere through fossil fuel, these glaciers retreat 50 m/year. The Braca glacier will likely disappear very soon (many informative photos are provided; the book overall shows 17 tables) leaving huge impacts. These facts are in direct disagreement with the opening statement of the book that “It would be more realistic to consider mountains as dynamic, certainly not fragile”.

A fascinating book topic deals with the fact that much of the traditional Nepali society is based on coexistence, rather than competition. For instance, Amchis (Tibetan healers) provide health care in villages, free of charge! Further, this book helps to expose “the tragedy of the commons” as a myth, because in many parts of the world, resources have been managed successfully for centuries by indigenous institutions!

Although agro-pastoralism is the traditional lifestyle of the Manangi, as early as 1784 they had received special trade privileges from King Rana Bahadur Shah, and their import permits were increased during the 1960s by the late King Mahendra. This invokes strong connections with cities abroad such as Delhi, Shillong, Kalkhutta and beyond (e.g., Singapore, Beijing), which are very viable now in times of globalization.

Many of the studies presented are centered on “tsampa, the traditional staple food of the people in Manang”. It is made of flour of roasted barley and is served with black tea and yak butter, symbolizing the economic status of the Tibetans.

For agriculture to be successful, good water systems are crucial and thus get well described in the text. “Nutrient management is an important feature of the farming system. No chemical fertilizer is applied”. Agricultural systems of Khet (a sophisticated system of cultivated fields) as well as Bari (terraced land) and the traditional Guthi culture are described. Much of the knowledge presented in this book is based, though, on the Dutch geographer van Spengen (1987).

It quickly becomes clear that land tenure is entirely under control of the villagers, but a break with their traditional lifestyle, *parampara*, has already occurred. Whereas traditionally, buckwheat was the “democratic” food, the effect of global agriculture can be seen easily in the study area by the new crop plants that were used in just the last 20 years (e.g. broccoli, carrot, radish, lettuce, onions, green beans). Absurdly, the area still has a larger dependence on imported rice, widely supported through the World Food Program, although Manang could double the local wheat production when better water systems exist. In addition, the book contributors present recent overbrowsing of forests and tree line. The regeneration of vegetation is affected by humans (also varying by type of slope). One concludes that the current treelines are possibly artificially reduced due to human overuse. (This book does not cover the grazing impacts caused by sheep, goats, yak etc.).

Chartered flights from the Manangi region now provide fresh yak meat to Kathmandu. But traditionally, one yak was locally shared among 4, 8, even 16 families. Today “Tourism and trade has introduced globalised food items such as tinned tuna, pizza, peanuts and biscuits”; this is specially obvious with the strongly increased consumption of dried noodles (enjoyed these days by children and adults several days per week). Manang was opened for tourism in 1977, and the authors labor the fact that, in academic writing, tourism is widely perceived as negative. But then, the famous Badhe Festival got described by the authors to display a “staged authenticity”, representing a recent artifact of bi-locality (having a house in Kathmandu as well as in Upper Madang), commercialized religion and global marketing forces for tourism.

By now, most Manangi live outside of Manang. This means a new definition of citizenship, of oneself, and entirely outside of the traditional passport. The problems associated with this bi-locality are widely discussed. “In 20 years from now, most of the inhabitants of Manang will be living in cities like Kathmandu or Pokhara ...”. This book does not describe the phenomenon of Western Union banks (which can be seen in high densities in Kathmandu, and elsewhere).

I like chapter 11 (Ethnomedical Plant Use): it's based on four years of fieldwork, co-authored with a Canadian author. It's also great that Common Property Resource (CPR) theory is explained, and that references are made to the Tribhuvan University Central Herbarium (TUCH). But many chapters are just based on one month of fieldwork or less, and are done by Norwegian village outsiders. The nice chapter 3, written by a local author, basically carries most of the relevant information presented in this book, with many of the other chapters being repetitive. A major shortcoming in many chapters, specifically some Norwegian ones, is the lack of described methods (e.g. “I conducted a household survey ...”), as well as digital data, GIS and remote sensing maps, URLs and shared online databases (global standard these days). Some chapters present circular logic or consist of an already published M.Sc. thesis. Rather outdated theories from Torstein Veblen (a Norwegian-American economist who published 1899) are promoted as baselines. Statistical validity of many statements made in this book remain doubtful (correlations, vague hypothesis (if at all), result figures of poor quality; some of the facts are conflicting). Most maps appear to be coarse bitmaps, poorly reproduced. Some relevant soil analysis were not completed because of competing lab interests and performances between Norway and Nepal (inter-laboratory comparisons showed no consistency).

The three-page index of scientific, common (English) and local (vernacular) plant names is helpful; but no accepted taxonomy (e.g., ITIS or IPNI) is used (which is confusing for the international audience and when trying to use findings presented). A four-page general index is provided, as well as a helpful page on acronyms and abbreviations. The reader will appreciate the good collection of literature references (local focus, with many basic North American ones lacking).

“The Intergovernmental Panel on Climatic Change (IPCC) has predicted that the Himalayas in general will get higher annual mean temperatures, more annual precipitation, increased monsoon rainfall, and shrinking areas under snow, ice and permafrost”. New grass species; e.g., *Calamagrostis*, have moved into the area already, probably due to climate change. But instead, some authors state naively that global climate change would mean that Scandinavia's agri-

culture could simply harvest more (and grasslands would improve), with Iceland having a double amount of sheep. Similar statements on increased productivity and “positive effects” of climate change are made by the authors for their Nepal study area! Another disturbing topic is the missing demand to stop overconsuming and reduce the wasteful use of fossil fuel and contamination of the atmosphere by the global community. Such omissions are no surprise considering that this project is funded by one of the wealthiest nations of the world is among the biggest oil and gas producers (the book receives the general governmental approval through a Foreword by the Norwegian ambassador who visited Manang briefly). Together with the Volkswagen Foundation funding chapters of economic interest (ethnomedicine to be exploited by the western pharmaceutical industry), the academic involvement of Bergen University promoting uncritically all such concepts needs to be seen as ‘dubious’.

The reader will easily find other Norwegian views and biases imposed throughout the text; e.g., “the social landscape of Manangi is at the verge of change and towards attaining a new identity” (instead of stating that it will go extinct, creating much human suffering; a path that in times of globalization many other cultures are already on), or that development of the study area would be driven by social factors, not climate ones (although the latter clearly affects income and resources; e.g., water and growing season length). Consequently, this book falls short on key ingredients for all our survival: appropriate social justice, global village and adaptive sustainable management.

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MISCELLANEOUS

A Mountain Year: Nature Diary of a Wilderness Dweller

By Chris Czajkowski. 2008. Harbour Publishing, P.O. Box 219, Madeira Park, British Columbia V0N 2H0 Canada. 192 pages. 36.95 CDA Cloth.

A Mountain Year by Chris Czajkowski is a delight to read and conjures up all the unspoiled beauty of the northern interior of British Columbia. The book is an illustrated journal of a year spent in a retreat away from the rush and mindless bustle of the busy city.

Czajkowski has spent twenty years up at Nuk Tessli, an isolated wilderness region east of Bella Coola, south of Tweedsmuir Provincial Park and five hundred miles north of Vancouver. There are no roads into the area on the western side of the Coastal Mountains, is known as the Charlotte Uplands. The flora ranged from stunted high altitude forest and rises to sub alpine and krummholz.

When Czajkowski first arrived on her own in 1988, there was no cabin there; she logged some trees with her own hands to build the first one. She used chain saws, ropes skids and block and tackle all hauled in by herself. After three years, two more cabins were built and now naturalists and hikers visit in the summer as paying guests. All that is impressive enough but is by no means all the journal teaches us.

This is a journal illustrated by her pen, pencil and watercolour sketches which are both delightful and informative. She has given us the Latin names of the illustrated flowers but not the authority for the names. This is not a book for identification of the plants to below the species level, they do not give enough detail for that, but as paintings they are very artistic. The illustrations of the birds and animals she observed are sketched and full of life and accurate observation. The

sketches give the journal a most personal character. But these illustrations are not the only gifts of this book. Czajkowski is obviously a devoted naturalist and a keen and knowledgeable observer.

The journal takes one through a year in the wilderness, starting at the end of 2004. It conjures up the great sense of silence that can be found in mountain and forests. The minus 22°C can almost be felt. This is a hard, tough life she leads and shares with two dogs. But she is attuned to nature and so observant of the atmosphere, the clouds and colours, the animals, birds and flowers that share the environment with her.

She has no electricity and uses her computer only when the sun has powered her photovoltaic system. She chops and drags trees for her fuel and heating and uses candles for light. To get to her cabin she hikes in several miles from where a small plane has deposited her and her luggage. She uses a sled to carry her luggage to the cabin. Having settled in, she has to get her water. For this in winter, she uses a chain-saw to cut through the ice crust on the lake and draws her water through the hole. There is no easy living here.

Day by day she records the weather and the birds that visit her feeders. At the end of February she gets a flight out, after some delays, to shop for supplies, give some talks, and brush up her first-aid in case it is needed by her guests or herself. The guests start arriving with the summer. Some come from overseas and help with the maintenance of the trails, blazing new ones and other chores. All the while Czajkowski records the flowers as they come into bloom, and paints them; lists the birds and observes their behaviour. Struggling at times with swarms of flies and mosquitoes, she leads

her guests to all the places of interest and teaches them about the ecology, etc. But summer passes quickly and she is alone again to write, paint and update her records and journal. During the fall she flies out to give lectures and to promote her books.

This is a book that teaches one about a life of solitude with nature, about being self-sufficient, and about

one of the unspoilt wilderness areas of British Columbia, of which there are fewer and fewer. I thoroughly enjoyed it and learnt a great deal and recommend it to all nature lovers.

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Choosing Wildness: My Life Among the Ospreys

By Claude Arbour, translated by Joan Irving. 2008. Greystone Books, #201-2323 Quebec Street, Vancouver, British Columbia V5T 4S7 Canada. 242 pages. 24.95 CAD Paper.

Choosing Wildness is a book for ornithologists and conservationists to savour. For 20 years, Claude Arbour lived year-round at Lac Villiers, 47° north latitude, in 2500 square kilometres of pristine wilderness far north of Joliette, Quebec. When Arbour first arrived, a pack of wolves occupied the adjacent forest, along with raccoons, pine martens and beaver. Supplies to last the six-month winter isolation had to be transported by boat to the cabin each fall. Emergency travel in winter, if required, was by snowplane or airplane, but during freezeup and breakup, even these modes were impossible for weeks on end. His beloved dog team provided winter transportation; human neighbours were 32 and 40 km distant. On one level, Arbour's tale is one of wilderness survival.

The book, however, is far more than that. It is also an account of the diligence and stewardship of a dedicated naturalist. Aided by sustained contributions from one hundred individual supporters of La Fondation Naturaliste de Lac Villiers, Claude made careful studies of the region's flora and fauna, including over 200 species of birds, and sent each supporter a written report each season. As the subtitle intimates, ospreys soon became one of his main projects. Early on, he built the first of nearly a hundred osprey platforms; the next summer the first of about 200 osprey nestlings fledged; subsequently, between 15 and 20 young fledged each year. One summer he logged 400 hours watching the nearest osprey nest to determine the dates when eggs were laid and later hatched, and when the chicks fledged. He recorded the number and size of fish brought to the osprey nest. Once, when a male osprey disappeared and two of the three chicks had died of starvation, Claude delivered food twice daily for the female and surviving chick, which he banded before it fledged. Once, he threw a fish out over the lake and the female osprey caught it on the fly. Sixty-one of his large osprey platforms persisted until his final survey in 2006; 19 breeding pairs were present that summer.

Injured ospreys and bald eagles were cared for and rehabilitated over long periods, some brought to him by the Union québécoise pour la réhabilitation des oiseaux de proie. Raptor and prey interactions he observed included a bald eagle that chased a Canada goose. Arbour contributed many observations to the provin-

cial database and provides accounts of spotted sandpipers, bald eagles, ravens, pileated woodpeckers, and sightings of a rare prothonotary warbler and Cape May warbler. He also observed a semipalmated plover with three young; however, the location makes it highly improbable that the birds nested locally.

Claude eventually cleared 12 km of winter dog-team and summer hiking trails leading from his cabin to adjacent lakes. One project, building platforms to assist loons in using nests away from the wash of the occasional fisherman's motorboat, was not successful. Sometimes he took extraordinary measures. When the dam at the bottom of the lake burst, Claude placed 150 bags of sand to plug the holes and thus saved the lake's population of northern pike. He also spent 90 hours mapping water depths throughout the lake.

There is more than just a hint of romance. Danielle, a nurse who shared his love of birds, came to visit him. Claude was extremely fortunate that she returned and stayed to share his joy of observing bountiful nature. She was willing to share all the hardships – and pleasures – of an extremely primitive life style. For example, Claude's routine was to have a daily bath in the lake until it froze over. His outdoor privy had a special winter seat sculpted from an insulating material that reflected heat immediately upon contact. He cut 35 cords of wood for fuel each winter. The couple raised two sons in the wilderness; Danielle covered their school lessons in two hours a day, four days a week, until they reached high school age and moved out to Joliette for their schooling. Both boys became self-reliant and trustworthy.

What had Claude and Danielle achieved? Useful data were collected. Platforms encouraged the Osprey population to increase. People were educated to value the wilderness and some shotguns were put away for good as television documentaries about Claude's work were shown across Quebec. Sadly, as the years went by, forested hilltops within view of their cabin were clear-cut and a road reached Lac Villiers, ending their isolation. But on the plus side, the new road allowed Claude and Danielle to take an annual breeding bird survey during their final four years of residence there.

I wish a map had been included, but anyone with a computer can rectify this deficiency by clicking Google Maps, then typing in Saint-Michel-Des-Saints (at the north end of Quebec Highway 131) and then Lac Villiers – in the wilderness about 50 km farther to the

north. The Epilogue, added especially for this translation, tells how Claude was forced to move back south in August 2006 after he became partially disabled by multiple sclerosis.

Rob Sanders of Greystone Books deserves commendation for agreeing to publish this English translation of a book that first appeared in French in 2000. The

compelling story is told in sixty short chapters, averaging only four pages each. An ideal length for a bedside table, much preferable to watching the grisly television news before one turns out the light.

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Return to Warden's Grove: Science, Desire, and the Lives of Sparrows

By Christopher Norment. 2008. University of Iowa Press, 119 West Park Road, 100 Kuhl House, Iowa City, Iowa 52242-1000. Hardcover. 215 pages. 26 USD.

I was attracted to this book because Chris Norment and I share a love of maps, of reading, of banding birds, of subarctic Canadian history, and a special fondness for Harris's Sparrows. We both admired Marguerite Heydweiler Baumgartner, whose 1933 studies of Harris's Sparrows and American Tree Sparrows near Churchill, Manitoba, helped inspire this book. Indeed, *Warden's Grove* is a worthy response to Baumgartner's challenge that "some intrepid young naturalist will elect to fill in the many remaining gaps in our knowledge of this bird of mystery." Norment has produced a fascinating book about studying Harris's Sparrow in what was then one of the remotest spots in the Canadian barren-land wilderness.

Warden's Grove is part of a series of "sightline books", classed by Iowa University Press as "literary nonfiction" – hence, not as science. Personally, I would have preferred a bit more science and less introspection, more hard facts and fewer attempts at self-analysis, but I have already seen two other reviews that praised what I disliked.

Norment first experienced Warden's Grove when he overwintered there in 1977-78, as a member of a six-man expedition that canoed 2200 miles from the Yukon to Hudson Bay. His interest in Harris's Sparrows and romantic recollections of the unrivalled isolation of Warden's Grove led him to return there for three successive summers, 1989 to 1991. The book describes the adventures and difficulties of living in remote Grizzly Bear country, some 310 floatplane

miles from Yellowknife and at that time 180 miles from the nearest human neighbour. This book was written more than a decade after his research, yet he fails to tell us that diamond mines are today just outside the margin of his "nearest-neighbour circle."

While *Warden's Grove* vividly describes the difficulties in research on Harris's Sparrows, it also shares interesting facts about a bird which, in 1931, was the last species in North America to have its nest and eggs discovered. Among other things, we learn that the eggs, laid by females with an average weight of 33.7 g, have an average mass of 3.09 g. The average height of vegetation at the nest is 47.6 cm. Parental feeding rates of the Harris's Sparrow approach 13 trips per hour, compared to 16 for the White-crowned Sparrow. Norment's studies, however, provide no clue to the cause of the decline in wintering Harris's Sparrow populations in the U.S. mid-west. Nor can Norment come up with an answer for how the nestling sparrows stayed almost completely insect free, while he and his assistant were plagued by large numbers of blackflies.

I admire Norment's writing skills. I share his admiration of the Harris's Sparrow, which he describes as unremarkable yet miraculous. I share his concern that our generation lives mostly in a world of noise; that we seek to obliterate time, distance, silence and space; that we demand immediate gratification. *Warden's Grove* is all the more interesting because the wilderness and isolation will soon be no more.

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The Archaeology of Animal Bones – Second Printing

By Terry O'Connor. 2008. Texas A&M University Press, John H. Lindsey Building, Lewis Street 4354 TAMU College Station, Texas 77843-4354. 206 pages. 29.95 USD Paper.

Coincident with reviewing this book, an archaeology class was for the first time using the skeletal collection which I curate, to identify bones from a Mi'kmaq midden. Therefore, I have been getting a pleasant overload of zooarchaeology from two fronts – a thoroughly enjoyable experience. This review, of course, focuses only on Terry O'Connor's ability to convey information and passion about the discoveries, extractions

and problems associated with interpreting past peoples' lives by the animal bones which they left behind.

At just over 200 pages, O'Connor's book is a sampler of many aspects of zooarchaeology; because of its size, it simply cannot go into detail in the chosen topics. The author's own experiences, many of which are appropriately included in these pages, are a valuable contribution and give the book a sense of reality.

The preface has a prosaic passage, "This book is not intended to be a didactic account that explains *how* animal bones ought to be examined and studied.

Instead, the aim is to show *why* this field of scholarship is an important one". In reality, the *why's* were relatively few, and dominantly found in the first chapter, *Why study a lot of old bones?* However, even this chapter barely had any of the promised *why's*. I think the author could have left out this attempt at philosophy and moved right into the down and dirty of zooarchaeology. Ironically, there were a lot of *how's*: many chapters were devoted to *how* archaeologists sort, age, quantify, and more; most methods were treated as overviews (which is appropriate in such a short book), with ample references to the primary literature.

As one would expect in any book on animal bones, there is an early chapter introducing the reader to bone (the material), the bones themselves and the sum of all the bones, the skeletons. Sadly, the orientation diagram of a bird skeleton has two mistakes (the fibula is mislabelled, digits of the manus are misnumbered), not a great start to a book on bones – the second printing, no less. The text of this chapter on orientation to the skeleton contains misleading statements (what is a "higher" vertebrate?) and outright mistakes (e.g., pectoral girdles do not attach the limbs to the vertebral column; caudal vertebrae are not "often reduced to a simple short rod of bone," etc.).

The study of all the events that take a bone from the living animal through to the researcher's bench is known as taphonomy. In addition to orienting the reader to bones, a must-have in a book such as this is an outline of taphonomic processes; without this knowledge, an archaeologist cannot correlate earlier peoples'

use of animals with the bones themselves. O'Connor gives a succinct description of these processes, with several examples (hypothetical and real) to allow the reader to understand that the bones dug up are not exactly as they were dropped by the people who used them.

Many methods used by archaeologists for dealing with animal bones are described, often with both pros and cons explained. Where appropriate, the techniques are compared with those used for working with ancient human remains. O'Connor has also done a good job of bringing in the literature from other disciplines that would clearly bear on the interpretation of, for example, diseases in animals.

This book has not been written for the specialist; my feeling is that it has been written with the interested novice or hobbyist, or perhaps even first year university students in mind. That said, it would have been a very useful addition to have, perhaps on the inside back cover, a geologic time scale; O'Connor liberally uses terms such as *Holocene* and *Neolithic*, terms that are undoubtedly quite meaningful to experts, but in and of themselves, relatively meaningless (other than "old") to the non-specialist. I did enjoy the odd interjection of humour – just like O'Connor's descriptions of his real forays into middens, the humour gave the book personality, a thoroughly appropriate quality.

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Snakebit: Confessions of a Herpetologist

By Leslie Anthony. 2008. Greystone Books. #201–2323 Quebec Street, Vancouver, British Columbia V5T 4S7 Canada. xi + 292 pages. 29.95 CAD.

There really are two kinds of people: those that like snakes and those that get the heeby-jeebies even at the mention of snakes. Leslie Anthony is certainly in the smaller, but more enlightened, former group. With a PhD specializing in herpetology, Anthony has caught more than his fair share of snakes. In this lively volume, he mixes personal memoir and adventures in exotic locales with a healthy dose of herpetology.

Anthony sets the stage with a prologue of discovering European Adders (*Vipera berus*) while skiing north of the Arctic Circle in Finnish Lapland. From there Anthony takes the reader through adventures more or less chronologically, beginning with childhood hunts for snakes in the suburban wilds of Willowdale and Don Mills, Ontario. Along the way he introduces a veritable who's who of Canadian herpetology.

Anthony completed a master's degree with Dr. Jim Bogart of the University of Guelph, as part of the team working on the genetics of the Blue-spotted Salamander (*Ambystoma laterale*) and Jefferson Salamander

(*A. jeffersonianum*) complex. He gives a detailed explanation of the current understanding of these strange unisexual hybrids, although is somewhat vague about his own work. The most vivid scene from his days in Bogart's lab is being attacked by a two-metre Hispaniolan Boa (*Epicrates striatus*). Anthony continued his work on the Blue-spotted Salamander complex in his PhD studies at the Royal Ontario Museum under the supervision of Dr. Bob Murphy, the "Punk King of Herpetology." Along the way he participated in the world's first phylogenetic rock opera, ROMMY, loosely based upon The Who's rock opera Tommy.

The highlights of the book are Anthony's stories of adventure on collecting expeditions with Dr. Bob: ambushed by bandits in Baja, Mexico, adventures with cobras and kraits along the Khe Moi River of Vietnam, and vipers in Armenia. In between, Anthony finds time to explore the Red-sided Garter Snake (*Thamnophis sirtalis parietalis*) dens in Manitoba and hunt for Northern Pacific Rattlesnakes (*Crotalus oreganus*) in British Columbia.

Anthony abandoned academia for travel and adventure writing, and his journalistic prowess is clearly evi-

dent. Scenes are vividly drawn and his writing style sharp and ironic, although Anthony sometimes becomes too glib, for example, "If continents are the earth's skin, then deserts are a patch of eczema on its butt" (page 132). Some readers will find his fondness for four-letter words unnecessary.

Canadian herpetologists will find this book on Canadian herpetology and Canadian herpetologists essential

reading. And anyone with a healthy interest in snakes or herpetology will find this book from a Canadian, snake-loving Indiana Jones to be a lively, educational and enjoyable read.

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NEW TITLES

Prepared by Roy John

† Available for review * Assigned

Currency Codes – CAD Canadian Dollars, USD U.S. Dollars, EUR Euros, AUD Australian Dollars.

ZOOLOGY

The Lives of Ants. By Laurent Keller and Elisabeth Gordon. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 252 pages. 50 AUD, Paper.

* **Arctic Fox – Life at the Top of the World.** By G. Hamilton. 2008. Firefly Books Ltd., 66 Leek Crescent, Richmond Hill, Ontario L4B 1H1. 232 pages. 39.95 CAD, Cloth.

A Pictorial Field Guide to the Beetles of Australia: Part four, Bolbozeratinae. By Mark R. Golding. 2009. Andrew Isles Natural History Books, 115 Greville Street Prahran 3181 Australia. 40 pages. 30.00 AUD, Paper.

Birds of Eastern Africa. By B. Van Perlo. 2009. Princeton University Press, 41 William Street, Princeton, New Jersey. 304 pages. 29.95 USD, Paper.

* **Birds of the Horn of Africa – Ethiopia, Eritrea, Djibouti, Somalia, and Socotra.** By Nigel Redman, Terry Stevenson and John Fanshawe. 2009. Princeton University Press, 41 William Street, Princeton, New Jersey. 488 pages. 40.00 USD, Paper.

* **Birds of East Asia.** By M. Brazil. 2009. Princeton University Press, 41 William Street, Princeton, New Jersey. 528 pages. 39.95 USD, Paper.

Birds of Europe, Russia, China, and Japan: Non-Passerines: Loons to Woodpeckers. By Norman Arlott. 2009. Princeton University Press, 41 William Street, Princeton, New Jersey. 256 pages. 29.95 USD, Paper.

Birds of Southern Africa. By B. Van Perlo. 2009. Princeton University Press, 41 William Street, Princeton, New Jersey. 320 pages. 29.95 USD, Paper.

Crabs in Cold Water Regions: Biology, Management, and Economics. Edited by A. J. Paul, E. G. Dawe, R. Elner, G. S. Jamieson, G. H. Kruse, R. S. Otto, B. Sainte-Marie, T. C. Shirley, D. Woodby. Alaska Sea Grant College Program, University of Alaska, P.O. Box 755040, Fairbanks, Alaska 99775 USA. 876 pages. 40 USD, Cloth.

Through the Eye of an Eagle: The Bald Eagle in New Brunswick. By Rudolph Stoeck. 2009. Self-Published.

Fifty Years of Flukes and Flippers: a Little History and Personal Adventures with Dolphins, Whales and Sea Lions – 1958-2007. W. Evans. 2008. Pensoft Publishers, Geo Milev Str. No 13a, 1111 Sofia, Bulgaria. 147 pages. EUR 20.00.

* **The ROM Field Guide to Freshwater Fishes of Ontario.** By E. Holm, M. Burridge and N. Mandrak. 2009. Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6. 464 pages, 29.99 CAD, Paper.

Field Guide to the Frogs of Australia. By M. Tyler and F. Knight. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 188 pages. 50 AUD, Plastic.

* **The Frogs and Toads of North America.** By Lang Elliott, Carl Gerhardt, and Carlos Davidson. 2009. Houghton Mifflin Company, 222 Berkeley Street, Boston, Massachusetts. 343 pages. 19.95 USD, Paper.

A Review of Phylogeny and Classification of Gerbillinae (Mammalia: Rodentia). Zoologicheskie Issledovaniya No. 9. I. Pavlinov. 2008. Pensoft Publishers, Geo Milev Str. No 13a, 1111 Sofia, Bulgaria. 68 pages. EUR 19.

Illustrated Keys to Free-living Invertebrates of Eurasian Arctic Seas and Deep Adjacent Waters; Volume 1. Edited by S. Vassilenko and V. Petryashov. 2009. Alaska Sea Grant College Program, University of Alaska, P.O. Box 755040, Fairbanks, Alaska 99775 USA. 192 pages. 40 USD.

Hunting Tactics of Peregrines and Other Falcons. By Dick Dekker. 2008. Hancock House Publishing. 19313 Zero Avenue, Surrey, British Columbia V3S 9R9. 200 pages. 29.95 CAD, Paper.

Reptiles and Amphibians of the Southern Pine Woods. By Steven B. Reichling. 2008. University Press of Florida, 15 NW 15th Street, Gainesville, Florida 32611. 320 pages. 29.95 USD, Paper.

* **The Beachcomber's Guide to Seashore Life in the Pacific Northwest.** By J. Sept. 2009. Harbour Publishing, P.O. Box 219, Madeira Park, British Columbia V0N 2H0. 224 pages. 26.95 CAD, Paper.

Sharks and Rays of Australia (Second edition). By Peter R. Last and John D. Stevens. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 644 pages. 120.00 AUD, Paper.

Shorebirds of the Northern Hemisphere. By R. Chandler. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 448 pages. 90 AUD, Paper.

* **Shorebirds of North America, Europe and Asia.** By R. Chandler. 2009. Princeton University Press, 41 William Street, Princeton, New Jersey. 448 pages. 35 USD, Paper.

[Editor's note – These two books appear to be the same although there are differences in the press releases (850 vs. 700 photos, 134 vs. 135 species covered) provided by the two publishers]

Snakes: Ecology and Conservation. By Stephen J. Mullin & Richard A. Seigel [Eds.]. 2009. Cornell University Press, Sage House, 512 East State Street, Ithaca, New York 14850. 392 pages. 60.00 USD, Cloth.

* **A Sound Like Water Dripping – In Search of the Boreal Owl.** By Soren Bondrup-Nielsen. 2009. Gaspereau Press, 47 Church Avenue, Kentville, Nova Scotia B4N 2M7. 236 pages, 26.95 CAD, Paper.

* **Squirrels of North America.** By Tamara Eder. 2009. Lone Pine Publishing, 206, 10426 – 81 Avenue, Edmonton, Alberta T6E 1X5. 180 pages. 18.95 USD, Paper.

* **Super Suckers – The Giant Pacific Octopus and Other Cephalopods of the Pacific Coast.** By James A. Cosgrove and Neil McDaniel. 2009. Harbour Publishing, P.O. Box 219, Madeira Park, British Columbia V0N 2H0. 208 pages. 26.95 CAD, Paper.

* **Suburban Howls – Tracking the Eastern Coyote in Urban Massachusetts.** By J. Way. 2009. Dog Ear Publishing, 4010W. 86th Street, Ste H, Indianapolis, Indiana 46248. 288 pages. 23.95 USD, Paper.

* **Turtles of the United States and Canada (2nd edition).** By Carl Ernst & Jeffrey Lovich. 2009. The Johns Hopkins University Press, 2715 North Charles Street, Baltimore, Maryland 21218-4363. 840 pages. 95 USD Cloth.

The Wild Mammals of Wisconsin. C. Long. 2008. Pensoft Publishers, Geo Milev Str. No 13a, 1111 Sofia, Bulgaria. 524 pages. 78.00 EUR.

Zooplankton of the Okhotsk Sea – A Review of Russian Studies. Edited by A. Pinchuk and A. Paul. 2009. Alaska Sea Grant College Program, University of Alaska, P.O. Box 755040, Fairbanks, Alaska 99775 USA. 62 pages, 5 USD.

BOTANY

The Metamorphosis of Plants. By J. Goethe. 2009. [Re-print of the 1790 classic book with new illustrations; in English]. The MIT Press, Five Cambridge Center, 4th Floor, Cambridge, Massachusetts 02142-1493. 136 pages. 21.95 USD, Cloth.

* **Les Orchidées indigènes du Québec/Labrador.** By S. Beausejour. 2009. Les Editions Nature, 645 Boulevard Manseau, Joliette, Quebec J6E 3E7. 176 pages. 49.99 CAD, Cloth.

Wildflowers of Southern Western Australia (Third edition, revised). By Margaret G. Corrick and Bruce A. Fuhrer. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 224 pages. 40.00 AUD, Paper.

Wildflowers of Wisconsin and the Great Lakes Region. By M. Black and E. Judziewicz. 2009. University of Wisconsin, 1930 Monroe, Madison, Wisconsin. 320 pages. 29.95 USD, Paper.

ENVIRONMENT

* **Environmental Conflict in Alaska.** By Ken Ross. University Press of Colorado, 5589 Arapahoe Avenue NE. Suite 206C, Boulder, Colorado 80303. 382 pages. 29.95 USD, Paper.

* **Pioneering Conservation in Alaska.** By Ken Ross. University Press of Colorado, 5589 Arapahoe Avenue, Suite 206C, Boulder, Colorado 80303 2006. 540 pages. 34.95 USD Cloth.

* **The Algal Bowl – Overfertilization of the World's Freshwaters and Estuaries.** By David W. Schindler and John R. Vallentyne. 2009. University of Alberta Press, Ring House 2, Edmonton, Alberta T6G 2E1. 348 pages, 34.95 USD, Paper.

Proceedings of the Arctic Biodiversity Workshop: New Census of Marine Life Initiative. Edited by K. Iken and B. Konar. 2009. Alaska Sea Grant College Program, University of Alaska, P.O. Box 755040, Fairbanks, Alaska 99775 USA. 164 pages. 7.00 USD.

Australia Saltmarsh Ecology. By N. Saintilan, 2009. Andrew Isles Natural History Books, 115 Greville Street Prahran 3181 Australia. 236 pages. 100 AUD, Paper.

Birdscapes – Birds in Our Imagination and Experience. By J. Mynott. 2009. Princeton University Press, 41 William Street, Princeton, New Jersey. 384 pages. 29.95 USD, Paper.

Defining Darwin – Essays on the History and Philosophy of Evolutionary Biology. By M. Ruse. 2009. Prometheus Books, 59 John Glenn Drive, Amherst, New York. 288 pages. 26.98 USD, Cloth.

In the Wake of the Beagle: Science in the Southern Oceans from the Age of Darwin. By Iain McCalman and Nigel Erskine, editors. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 192 pages. 50.00 AUD, Paper

The Northwest Dive Guide. By M. Hughes. 2009. Harbour Publishing, P.O. Box 219, Madeira Park, British Columbia V0N 2H0. 272 pages. 29.95 CAD, Paper.

* **Ecology of Fragmented Landscapes.** By S. Collinge. 2009. The Johns Hopkins University Press, 2715 North Charles Street, Baltimore, Maryland 21218. 340 pages. 70 USD, Cloth.

* **Biological Notes on an Old Farm.** By G. Wiggins. 2009. Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6. 359 pages. 45.00 CAD, Cloth.

* **Parks and Nature Places Around Vancouver.** Edited by Alison Parkinson. 2009. Harbour Publishing, PO Box 219, Madeira Park, British Columbia, Canada V0N 2H0. 272 pages 24.95 CAD, Paper.

First Fleet Artist: George Raper's Birds and Plants of Australia. By L. Groom. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 145 pages. 50 AUD, Paper

Seahorses and Their Relatives. By R. Kuitert. 2009. Andrew Isles Natural History Books, 115 Greville Street, Prahran 3181 Australia. 334 pages. 130 AUD, Paper

Speciation and Patterns of Diversity. Edited by R. Butlin, J. Bridle and D. Schluter. 2009. Cambridge University Press, 32 Avenue of the Americas, New York, New York 10013. 333 pages. 65 USD Paper, 140 USD, Cloth.

Waterfalls of British Columbia. By T. Greenfield. Harbour Publishing, P.O. Box 219, Madeira Park, British Columbia V0N 2H0, 208 pages. 26.95 CAD, Paper.

Wild Moments. By M. Engelhard. University of Alaska Press, 794 University Avenue, Suite 220, Fairbanks, Alaska 99709. 248 pages. 21.95 USD, Paper.