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## BOOK REVIEW

**Seasonally Dry Tropical Forests.** Stephen H. Bullock, Harold A. Mooney, and Ernesto Medina (editors). Cambridge University Press, Cambridge, UK, 1995. Pp. xvii 450. \$100.00 (cloth). ISBN 0 521 43514 5.

Over the past few decades major research and conservation efforts have focused on saving the tropical "rain" forests. Dry forests, however, occupy a much larger portion of the tropics than do rain (and moist) forests. Furthermore, because the climate is more hospitable to *Homo sapiens*, most tropical-dwelling folks have chosen to call what is dry "home" (it is where the species evolved, after all). Dry tropical forests have thus been used, changed, and degraded to a greater ex-

tent and for a longer period of time than adjacent humid forests. Although rain forest research and conservation efforts are much needed, basic and applied research to direct management and conservation of dry forests are even more critical. A stated goal of this volume is to summarize what is known of these forests in order to direct further research.

This book is a compilation of the proceedings of a symposium held at the Estación de Biología Chamela, Jalisco, México, and sponsored by the Universidad Nacional Autónoma de México (UNAM). The year is not indicated. It is a refreshingly well-edited text. Each chapter is clearly outlined with its own summary and references, and a comprehensive index to the volume is provided. The focus of *Seasonally Dry Tropical Forests* is admittedly slanted toward the neotropics (10 of the 17 chapters). This bias reflects the present state of knowledge in the neo- versus paleotropics and, if anything, points to the dearth of studies in the Old World. With only one or two exceptions (e.g., Matson and Vitousek), the chapters summarize existing studies on various aspects of dry tropical forest ecology and often make comparisons with rain/moist forests. It is a valuable addition to anyone's library who works anywhere in the tropics.

The introductory chapter by Bullock, Mooney, and Medina provides a detailed synopsis of each contributed chapter. Four chapters review the distribution and structure of tropical dry forests in Central America and the Caribbean (Murphy and Lugo), Brazil (Sampaio), Africa (Menaut, Lepage, and Abbadie), and Thailand (Rundel and Boonpragob), including human impacts. Graham and Dilcher have contributed a chapter on the (Cenozoic) paleobotany of northern Latin America and the southern United States (only microfossil records exist). Three chapters examine the diversity of neotropical dry forests' woody species (Gentry, to whom this volume is dedicated), vertebrates (Ceballos), and life forms of higher plants (Medina).

The remaining chapters address specific ecological aspects of neotropical dry forests, drought responses in trees (Holbrook, Whitbeck, and Mooney), plant reproduction (Bullock), and plant-herbivore interactions in Mesoamerican tropical dry forests (Dirzo and Dominguez), and physiological ecology of tropical dry forests in general, namely biomass distribution and primary productivity (Martinez-Yrmzar), nutrient cycling (Jaramillo and Sanford), biology of the below-ground system (Cuevas), and a nitrogen trace gas emissions study at Chamela (Matson and Vitousek).

Most of these chapters address the impacts of humans on dry tropical forests to some degree. Only the last two chapters have human/environment interactions as their theme. As such they will be of greater interest to ethnobiologists. Maass reviews the ways in which conversion of tropical dry forest to pasture and agriculture affect the environment. He then compares these impacts with humid forests to emphasize the importance of developing appropriate management. The final chapter on the ethnobotany of the Mexican tropical dry forests (Bye) provides a summary of research done to date, and includes an analysis of plant use between two biological stations in Mexico's dry (Chamela) and wet (Los Tuxtlas) tropics.

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## BOOK REVIEWS

**Ethnoveterinary Research and Development.** C.M McCorkle, E. Mathias, and T. W. Schillhorn van Veen (editors). Southampton Row, London: Intermediate Technology Publications. Pp. vi; 338 (including 24 tables, 14 illustrations, 1 appendix and 14 pages of index). £17.95. ISBN 1-85339-326-6 (paperback).

*General contents.*—Ethnoveterinary Research and Development tackles the difficult task of describing a program that synthesizes indigenous and Western veterinary techniques. As eloquently stated in the introduction of this text, "...policies that refuse recognition to or are overly controlling of localized and privatized practitioners who can deliver alternative or techno-blended treatments and husbandry strategies will deprive the very public who most require such services" (p. 21). It seems sensible to adopt some of the wisdom and experience of local practitioners who have successfully raised and cared for their animals. Moreover, cultural sensitivity may facilitate cooperation from local policy makers. Natives from developing countries may choose to interact with scientists who are realistically aware of their socioeconomic and agro-ecological environment. Some chapters (e.g., chapters 3 and 11) helped the readers to realize the psychological and economical demands that are placed on natives who wish to make the transition from traditional to modern technology and the need to develop a plan that will allow them to do so. Chapter 3 described how Western veterinary knowledge caused conflict between the generations (youth and elders) and their respective world views, while chapter 11 noted how the high cost of drugs and services have forced Samburu pastoralists (who are now seeking wage labor) to rely on borrowed and inexperienced women, boys and girls for some of their responsibilities. These chapters provide a compelling vision of modern, non-Western animal health care. The reader is left to consider the potential benefits of the influence of Western knowledge, methods and equipment (to man and beast alike).

Other chapters (e.g., chapters 6, 7, and 10) are largely anecdotal, admittedly difficult to substantiate, and unlikely to have modern application. Nonetheless, they provide interesting historical information. In Chapter 6, the prayers, chants and "secret restorative roots" of Native Americans are not of use to the modern health care provider if the details are lacking. Also, one needs to ask whether Native Americans' commitment to horses will allow them to collaborate with Western veterinarians or must this knowledge be maintained as a cultural secret. In Chapter 7, medicinal bouquets used by French shepherds (the data presented appear quite dated) reference a 1989 survey not yet completed. Is the reader to assume that the work is still not done? In Chapter 10, on traditional castration of bulls in Ethiopia, one wonders whether Maskal-day celebrations would seem less meaningful to Ethiopians if they used Burdizzo pincers to castrate the bulls?

Chapters such as 12, 13, and 15 show how people in many cultures are constantly seeking ways to prevent disease in their animals. This is good because disease prevention is an often overlooked and under-utilized technique for the natural promotion of animal health. Chapter 12 contains a unique reference to animal training for disease prevention in North Africa and India (p. 129). Chap-

ters 13 and 15 emphasize beliefs people have about the spiritual and natural causes of illness as well as the different types of health care strategies employed. It seems true that while technological practitioners employ sophisticated methods to improve on animal health care and production, some village-level poultry farmers yield very good results while requiring very little technological investment.

Several chapters (e.g., Chapters 5, 14, and 16) not only cited the spiritual and emotional conditions linked to various animal diseases, but also outlined several types of traditional treatments or remedies. However, we question the utility of describing treatments with no evidence of contemporary clinical validity. Chapter 14 is filled with prescriptions (recipes) for traditional therapies in which validations of (or speculation about) effectiveness are lacking. Having attended the horrific death of a dog treated with "pennyroyal oil" as a holistic flea remedy has made one reviewer (WVB) shy from recommending any alternative therapy not validated in some way. For example, it is difficult to believe a 5 cm incision in the ear will aid in treating tympany, as described on p. 150, and it would be questionable, in my opinion, to recommend an osmotic laxative for diarrhea, to withhold colostrum to prevent parasite infestation, or to sprinkle black pepper into a sick animal's eyes for "some ailments" (pp. 150-152).

*Highlights of the book.*—Overall this book is a delightful overture to a still esoteric discipline. It provides a fascinating introduction and insight to "alternative, holistic, nontraditional therapies." The book provides a pan-global overview of facts, myths, and legends likely common knowledge in their respective circles but not widely disseminated. The subject matter certainly increases the level of awareness of "big picture" management of animal (perhaps including human) health and welfare—a must as we move into the 21st century with its increasing demands on our shared but limited global resources.

The authors of this book discuss various veterinary issues encountered in different cultures. They unequivocally point out the importance of "techno-blending" to address health management issues. As an example, the description in chapter 3 (p. 41) of the curious Nilotic ritual of distributing the spinal cord of bulls during ritual sacrifice is intriguing with the current knowledge of Bovine Spongiform Encephalopathy and lessons learned from the transmission of Ebola virus during ritualistic body preparation ceremonies.

The book provokes many questions about other factors a researcher may consider. How many interactions did the local people have with modern veterinarians throughout each study? Did they chose traditional veterinarian services out of preference, lack of confidence in modern treatments, lack of information about modern treatments, fear of reprisal from traditional healers, or inaccessibility to modern programs?

*Critique.*—Unfortunately, the way the book is written limits its accessibility to people who have the time and energy to wade through its uneven style and content. This book would appeal to a wider audience if the chapters were presented in a more clear, concise, and standardized manner. The continuity could have been improved dramatically if the editors had exercise more active control over the writing style. The inclusion of notes in the chapter titles is a further distraction to the reader. Many of these would be more appropriately included in the text.

Photographs and illustrations are lacking. Additional photographs would help to visualize the complexities of a given situation and enhance the reader's appreciation of the conditions and environments described in the text. Some authors did a better job of providing both the indigenous name and Western name for given ailment and treatment. This information could have been standardized in a table in each chapter. Each author could have provided a paragraph about their professional affiliation, when and why they did their research, and so forth.

Most importantly, the rationale for the book's organization is not readily apparent. Parts I and II both appear to be case study reports. Why were they separated? Part III appears to deal with "materials and methods." However, it is not until chapter 19 that the reader finds specific methodologies for ethnoveterinary research and development. Are the methodologies presented in chapters 19 and 20 meant to suggest standard procedures for collecting data or to show different approaches to data collection. In our opinion, chapter 23 should have been chapter 1, as it is a poignant opening for the book.

*Recommended Audience.*—Although the organization of the book is weak, it provide a great deal of information, and could be a valuable tool for health professionals. As a teaching tool, this compilation would be excellent to stimulate discussion of how people in non-technological societies have learned to care for the animals on which they depend for physical and psychological nourishment. There is fodder for a great deal of productive research awaiting the astute reader of this text. However, one important step that remains is to separate folk veterinary myth from effective folk veterinary practice. From the perspective of a culture psychologist, the question that came to mind most often was, "What cultural and scientific understanding do we need in order to incorporate effective traditional practices into contemporary veterinary training?" From a veterinary perspective, the question that came to mind most often was, "Does it work?" What evidence is there that these things described have cultural, psychological, or physical value to animal or human health?". We deeply appreciate the concept on which this book was predicated. The information provided, and in some cases, the information lacking here, will spur research that may systematically advance the state of ethnoveterinary knowledge and practice.

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**Healing with Plants in the American and Mexican West.** Margarita Artschwager Kay. Tucson: The University of Arizona Press, 1996. \$19.95 (paperback), \$50.00 (clothbound). Pp. xvii; 315. ISBN 0-8165-1646-4 (paperback), 0-8165-1645-6 (clothbound).

The general population, seemingly insatiable for information about herbal medicines and alternative health therapies, indiscriminately devours the many new publications on medicinal plants. Are readers looking for clues to send them on the journey of "self-healing" the "natural" way? The writers of many of these books seem well attuned to this large and vulnerable market, and quite prepared to exploit it. Refreshingly, this is not so for *Healing with Plants in the American and Mexican West*.

Margarita Kay's book is informative, thoughtfully written, and highly readable. She covers a wide range of traditional medicinal plants found in the western United States and western Mexico. Although a list of plants and their medicinal uses constitutes a significant portion of Kay's book, what sets this publication apart from its many competitors is the care devoted to contextualizing the significance of these plants for the peoples who use them. Kay combines ethnographic information with data from hundreds of personal interviews she conducted with people familiar with plant remedies. The ethnomedicinal information is presented as part of an exploration of the evolution of the Mexican American domestic pharmacopoeia. The result is an impressive assemblage of the historical and cultural information on plants of this region, combined with their medicinal applications.

*Healing with Plants in the American and Mexican West* is divided into two main parts, the first providing the historical, cultural, and botanical backgrounds and the second consisting of medicinal plant listings. Part 1 is divided into four chapters: 1) "Ethnohistory" sets a cultural and historical context for the significance of plants to cultures of this region; 2) "Plants, Their Names, and Their Actions" discusses the importance of plant names (both common and scientific), and provides a general overview of phytochemicals related to pharmacological action of the plants; 3) "Illnesses Treated With Plants" acknowledges the complexity inherent in "translating" disease perceptions from one culture to another and thus the importance of examining lay vocabularies for clues to cultural perceptions of and responses to disease. General procedures for preparing plant medicines and conditions treated with plants are also discussed; 4) "Healing Illnesses of Women and Children" explores concerns and afflictions more specific to women and children, indicates plants used in treating these, and outlines reasons that information on this topic is generally less often discussed.

In Part 2, the 100 most commonly reported medicinal plants for this region are listed, complete with plant descriptions, historical and modern medicinal uses, and a brief summary of their known phytochemistry, including reported toxicities. Parts 1 and 2 are followed by two brief appendices concerning safety of medicinal plants and pharmacologically active phytochemicals, authors notes, a bibliographic essay, an extensive reference list, and an index (by plant name and medical condition). A map showing the locations of culture groups in the American and Mexican West, a table of medicinal plant genera (by culture), and 29 plant drawings interspersed throughout the text are thoughtful inclusions.

Overall this book is excellent, with the exception of weaknesses in the phytochemistry, largely due to generalizations or brevity. However, the majority of the phytochemical information that is provided is secondary to the historical and modern uses described, and does contribute an adequate introduction to and some relevant information about this aspect of medicinal plants.

*Healing with Plants in the American and Mexican West* presents information from a variety of sources in an interesting, scholarly fashion, and in a convenient and readily usable form. It is not meant as a tool for prescription nor self-treatment, but rather as a means to acquaint the reader with a range of ethnomedicinal information, issues, and practice. This book will be of value to anyone interested in the plants and peoples of this region. Kay's thoughtful presentation makes it a pleasure to read, no matter what the incentive. Recommended.

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**Wild Plants of the Pueblo Province.** Exploring Ancient and Enduring Uses. W. W. Dunmire and G.D. Tierney. Santa Fe: Museum of New Mexico Press, Albuquerque, 1995. Pp. xii; 292. . \$29.92 (hardbound), \$19.95 (paperbound). ISBN 0-89013-282-8 (hardbound), 0-89013272-0 (laminated cloth).

The Pueblo Province is situated in New Mexico. It extends over the area of the Rio Grande Valley from Taos to Isleta, the mountain ranges on either side of the valley, the Rio Pueblo and San Jose river drainages west of the Rio Grande, and moves over the continental divide to include Zuni territory, a region of North America where diverse cultural relationships with plants remain largely intact.

The book was originally conceived by the authors as a guide to some of the common trail side plants of Bandelier National Monuments and the Pajarito Plateau and their prehistoric and recent uses by Indians living in this area. It includes many beautiful photographs. Altogether, there are approximately 90 color and 20 black-and-white photos.

The book begins with an eight-page prologue—a "How to Use this Book"—and includes a map of locations and recommendations to visitors that they respect the people and the land. The remainder of the publication is divided into nine chapters, each of which concludes with a "Suggested Reading" list which relates to the contents of that chapter.

Chapter 1 discusses the enormous natural diversity of the region. Chapter 2 reviews the history of the Pueblo peoples, tracing their beginnings from hunters to foragers and from collectors to cultivators. Following this, the book discusses the impact of contact and colonization on the peoples of the region. Chapter 4 highlights the modern Pueblo peoples and Chapter 5 discusses plants as living artifacts.

Chapters 1-5 describe the people living in this region, making reference to traditional plant use. When a plant is cited in the text, the local name of the plant, as well as a page number referring to the location of a photograph of that species, is located in the margin.

Chapter 6 describes nearly 300 plants and their uses. These are arranged by growth form: trees, shrubs, grass-like plants, and herbaceous plants, then by plant family in phylogenetic order. Each description includes the common and scientific name of the species or group of species. The distinguishing features are described for each plant and accompanied by a line drawing, and, for most, a color photograph of the entire plant. In the description, the reader is referred to the different monuments and parks where the plants can be seen and identified from public trails. This chapter starts with a brief description of the parks, their location and contact addresses.

Chapter 7, entitled "Ethnobotany in New Mexico," consists largely of an historical introduction to ethnobotany and the related sciences and would have been better placed at the beginning of the book.

Recent modifications to the landscapes of the Pueblo province are discussed in Chapter 8 with a summary of the major factors which have shaped the landscape of the area.

In Chapter 9, the authors identify other places to visit in the region and introduce the reader to other interesting visits to museums, monuments and parks which offer additional information on the Indians of New Mexico.

Finally, there is a table (pp 254-266) which compiles all the species whose uses are known in the New Mexico Pueblo Province in present day or in the past. This list is based on a comprehensive review of the technical literature as well as information collected personally by the authors.

The publication includes a bibliography (pp 267-278), as well as photo credits, an index and information about the authors.

This book contains a great deal of information about the uses of plants by the people of the Pueblo Province, much of it collected from modern peoples by the authors. The text is easily readable for a non-specialist public, the photographs are beautiful and useful. This book would be useful for an ethnobotanist, botanist, students, and people interested in traditional uses of plants and the knowledge of American Indigenous peoples.

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**Plantas Medicinales en el Sur Andino del Perú.** 2 Vols. C. Roersch. Koeltz Scientific Books, Koenigstein, Germany and Champaign, Illinois, 1994. Pp. xiv; 1188. US\$177.00 (paper). ISBN (Germany) 3-87429-369-67-2; (USA) 1-878762-67-2.

This publication is another manifestation of the surge of serious interest in the medicinal plants of non-industrial societies. The healing power of their flora has found an international respectability that, back in the 1960s, could not have been imagined. South America's Andes has a rich inventory of *materia medica*, as would be expected from a land of pre-Columbian civilizations. The geographical scope of this work is restricted to the most traditional part of the Andes, the Departments of Cusco, Puno, and Apurímac in southern Peru. Just as the people of that area are themselves primarily descendants of the Incas, so most medicinal plants form the bases for remedies that predate the Spanish Conquest. Eighteen percent of the plants on this list were introduced beginning in A.D. 1532, which is uncannily also indicative of the extent of European traits in peasant livelihood.

The two-volume work is organized into a thematic section and an herbal section. In the former, we first read a discussion of the development project in traditional medicine which led to the establishment in Cusco of the Centro de Medicina Andina. Social activists in the Catholic Church and foreign donors, especially from The Netherlands, understood the need to recover traditional medicinal knowledge as a valid counterweight to the monopolistic claims of the modern medical establishment to successful curing. For almost a decade, the author was closely associated with this project whose work included plant collections from valleys, forests, and *punas*; recording of an impressive 2,940 medicinal recipes; bioassays; and yearly conferences to exchange knowledge. Trained in organic chemistry and pharmacology, the author is particularly concerned with the active principles in these remedies. Not all remedies have an active principle; sympathetic magic forms an element of Andean folk medicine too. The thematic section also contains a chapter on the aims and methods of science in order to show how folk medicine of the Andean tradition differs from drugs developed by laboratory experimentation. The author then launches into folk taxonomy and how the peasant mind conceptualizes useful plants. Scholars of folk classification will find this chapter instructive in defining universals derived elsewhere.

Two-thirds of this treatise is devoted to plant-by-plant entries arranged alphabetically by their most common name. Since no botanical key is included with which to identify the plant, it becomes imperative to know its commonest name. Alas, Quechua, the language in which most names occur, has had several orthographies, which can complicate retrieval. Line drawings (some clear, others less so) of stems, leaves, and flowers have value in identification, but they are available for only 31 percent of the entries. Botanists and others in Linnean straitjackets risk being frustrated that these plants are not grouped by family. Instead a folk perspective prevails in which a named plant may correspond to a number of related species or even to species in different genera.

For each of the 509 descriptions in the herbal section, succinct and well-documented information is provided on: other common names; the scientific binomial; habitat; categorization of plant into "hot," "temperate," or "cold;" parts of plant

used; illness(es) for which plant is indicated; and mode of application. Somewhat more discursive comments then follow on its ethnobotany, phytochemistry, and toxicology. A summarizing evaluation for each plant attempts to capture the essence of its relative importance, preferential uses, and apparent therapeutic value or dangers.

Not given much attention in these individual entries or elsewhere in the book are the ethnographic, historic, and folkloric dimensions of Andean medicinal plants. This deprives the work of a larger contextual significance, for many of these plants have long cultural associations. Another caveat is that certain plants, especially those known as contraceptives, abortifacients, aphrodisiacs and hallucinogens, are omitted. Inexplicably, coca (*Erythroxylum* spp.), whose numerous alkaloids and sacred status have always made it the leading panacea of traditional Andean medicine, does not have an herbal entry. *Wanarpu* (*Jatropha* spp.), whose aphrodisiacal power was known to the Incas as it is today, is absent. One looks in vain to find the famous *willka* (or *vilca*) (*Piptadenia macrocarpa*). Known and used in this region as a purgative, it becomes in larger doses an hallucinogen of great cultural-historical continuity. Some other plants, such as manioc (*Manihot esculenta*), with no substantive medicinal use, nevertheless receive an entry. The criteria for exclusion or inclusion are not provided; thus it is fair to wonder if Western and Catholic bias entered into these expurgations.

The most serious disquisition prepared so far on the medicinal plants of southern highland Peru, its positive achievements are substantial. It serves as a cardinal corrective to the many popularized accounts on Andean folk medicine in Spanish that over the years have mixed fact with sometimes the wildest fancy. By screening the many claims to healing power, author Roersch has set the record straight on that copious list. For many plants, he evaluates the phytochemical properties by winnowing the fugitive and disparate literature which in this book amounts to 499 references. That documentation, combined with years of field experience in working with plants and people in the Andes, has created a sound knowledge base. However the treatment is not definitive, nor is the work trenchantly analytical. Many questions about the relationships of Andean culture and these plants are not probed, much less raised. Summaries are called "conclusions."

This book represents an exemplary international cooperative effort: a Dutch author writing in Spanish and a German publisher who also distributes in the USA. In this case, the publisher did not provide copy editing which would have tightened up certain paragraphs, insisted on complete references, and caught the typographical errors which crept onto the printed page. Three chapter summaries are provided in English and there is also a 14-page synopsis for those who read Dutch. In published form this thesis, filed at the Catholic University of Nijmegen, becomes much more accessible than would a manuscript dissertation available only in The Netherlands. There is only one hitch: the people who need it most would not be able to afford the price.

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**La Zoologie des Montagnais.** Daniel Clément. Peeters, Louvain-Paris, 1995. Pp. xiv; 569. 1260 B. fr. (ca. CA\$ 49)(paperback). ISBN 2-87723-099-6 (Éditions Peeters-France). ISBN 90-6831-686-9 (Éditions Peeters-Louvain-Paris).

Clément's book—a modified version of his Ph.D. thesis—has two aims: to give a substantial account of the zoological knowledge of the Montagnais (Innu) of Northern Québec, and to contribute to the debate on the nature of traditional systems of classification and their relation to Western/scientific taxonomy. (He has already published a shorter account of Montagnais ethnobiology—see *Journal of Ethnobiology* 15:1-44).

The first chapter precisely deals with the latter point. The author's main hypothesis is that Montagnais zoology "shares with science more similarities than differences" (61), since they "observe, compare, and classify animals and have developed their own concepts to cope with this reality" (5). This, he exemplifies by showing the gross correspondence between the four major classes of the native taxonomy and the categories of Western science (58). Thus, from the very beginning the author takes side as a partisan of a "universalistic" conception of ethnobiology, as opposed to the "ethnoscience" approach, which insists more on the linguistic and cosmological aspects of animal nomenclature and classification. Most of the chapter reviews the different theories of modern science, and outlines a history of ethnobiology. It ends with a detailed description of the author's field methodology and his corpus of data.

Chapter 3 deals with anatomical knowledge. Particularly detailed, and well-illustrated, it contains four divisions, following the main life-forms (*aueshishat* "four-legged," *nameshat* "water-dwellers," *missipat* "waterfowl," and *manitûshat* "harmful animals, insects"). Both external and internal parts are described with remarkable precision by his informants, and this nomenclature is thoroughly analyzed from a linguistic point of view (e.g. the *uîshinaiat/uîtuia* complex which, in different mammals, describes testicles and/or foreskin glands and/or anal glands [pp 90 ff]). Extensive references to native texts also show that cultural practices regarding animals (like meat-carving) have notable impact on the nomenclature, particularly internal parts, while functional discourse is limited to digestion, breathing, locomotion, and reproduction, as could be expected (pg 130). A polemical aspect of this chapter refers to the *manitûshat* category, which Clément translates as "harmful animals," and which includes frogs, lice, snakes, mosquitoes, and flies. As the author recognizes (pg 120), the proper translation is "malignant spirit" and this points to an important feature of Montagnais' (and others') animal taxonomy: namely the intrusion of the supernatural. This dimension is deliberately minimized by the author in favor of a purely "naturalistic" treatment of native knowledge.

The following four chapters are concerned with animal behavior, that is: "Sound, senses and motion" (Chapter 3), "Habitat and food" (Chapter 4), "Seasonality and animals" (Chapter 5), and "Reproduction" (Chapter 6). It is, of course, impossible to summarize the enormous amount of information included, covering more than 200 pages, which reveals the consultants' amazing familiarity with the patterns of feeding, moving, mating, and caring for the young. The author's analysis also includes references to the Montagnais lore, like one tale from the

Wolverine cycle, which synthesizes in a pleasant and didactic way the native view of animal locomotion.

Contrary to the highly empirical content of these chapters, Chapters 7 ("Identification and nomenclature") contains an extensive theoretical section in which Clément is concerned with the correspondence between the native success at identifying species and the total number of species found in the territory. Results of these tests seem rather inconclusive (pg. 390). On the other hand, by studying the components of animal-names among the Montagnais, he demonstrates that nomenclature follows very systematic patterns, the most frequent being the qualification of a superior taxon by an attribute selected from a relatively limited set: morphology, size, or color (pp 404-410).

Chapter 8 ("Classification") deals with the principles according to which the Montagnais separate animals into various categories and the result of such activity. According to one's basic assumptions regarding the nature of classifications, his analysis will be judged satisfactory or unconvincing. For, on the one hand, the author does present us with a rare feat: an integrated taxonomy of the animal kingdom, with an (unnamed) "unique beginner" splitting in two ("edible"/"non-edible"), the edible animals being divided between "those which have meat" (*aueshishat*) and those which have flesh" (*nameshat*), and so on to the last species. But there is a basic flaw: this is not a general-purpose classification, but a largely monothetic classification, based on one animal use: food. The author starts with a long and rather puzzling discussion on the notion of species among the Montagnais. This serious methodological shortcoming comes on top of another, regarding the notion of species, when the author unsuccessfully tries to convince the reader that the Montagnais share the biological concept of species as in-breeding groups (pp 416 ff).

In summary, and in spite of the reserves expressed at the theoretical-methodological level, Daniel Clément's book constitutes an invaluable source of empirical materials regarding the animal knowledge of the Montagnais. Furthermore, these data were collected at the very moment the traditional hunting economy is giving way to generalized sedentism. As such, it is a must for any student of the relationships between aboriginal peoples and animals in the Northern woodlands and it should be present in the library of anyone concerned with the biology and cultural anthropology of North America.

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