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THE ECOLOGY OF EDEN

EVAN EISENBERG. 1998. Random House, Toronto. 612 pp. Soft cover $22.00
ISBN 0-394-22116-0

The Ecology of Eden – this intriguing title raises expectations that are more than fulfilled by the interesting, indeed fascinating, text that follows it. It is not easy to capture the essence of this information- and idea-filled book in a brief review, but there need be no hesitation in recommending it enthusiastically as a penetrating and refreshingly unconventional examination of the place of the human species in the natural world. Educated in philosophy and classics, and latterly in biology, and with a book on the cultural impact of recorded music already to his credit, Evan Eisenberg brings a perspective to the subject that one does not expect to find in the environmental literature.

In spite of the increasing urbanization of human society and its attachment to the allure of city life, there is a widespread (some would say nearly universal) yearning to draw closer to the natural world from which our species has risen, a dream of a "return to Eden". This yearning is expressed in the ever expanding suburbs around our cities, the massive exodus "to the cottage" on long weekends, occasional treks into the shrinking wilderness and even in attempts to re-green the inner city. Eisenberg provides an enlightening backdrop to the on-going debates about the necessity to preserve wilderness, the loss of productive farmland to urban sprawl, the impact of forest destruction and many other environmental questions, with his exposition of the interplay between nature and human culture through thousands of years of history.

In the first of the four parts of the book, we are introduced to the circumstances surrounding the abandonment by our forbears some ten thousand years ago of the hunting and gathering way of life that had sustained them for more than a million years. Instead, they began to form associations with other species such as the wild ancestors of wheat and barley and of cattle and sheep. These alliances, which biologists call mutualistic because they benefit both partners, had far reaching consequences as they became the practice of agriculture. The productivity of these mutualistic associations empowered the growth and spread of human population and the rise of urban centers where cultural and technological developments could flourish.

As civilization arose in the ancient Near East in the lands of the biblical Canaanites and the Mesopotamians, two world views emerged which have persisted in the derived cultures of the West. These are represented in the second part of the book as *The Mountain* and *The Tower*. The former saw wilderness as the heart of the world while, for the latter, the heart was in the human-constructed city. These contrasting views can be traced through the mythologies by which people ever since have attempted to come to terms with their place in nature.

In a series of chapters designated *Idylls*, which constitute the third part of the book, we observe how people in different times and places have dealt

with the tension between the mountain and the tower. There has been a search for the perfect midpoint between the two, reflected in the pastoral Arcadia of the ancients and today's suburbia, as well as in pleasure gardens and country estates of diverse design down through the ages. The colonization of America is seen as a direct confrontation with nature which assumed that wilderness would never be exhausted. Most recently, our species has sought its proper place through the science-based mythology of the Gaia hypothesis, the concept of the earth itself as an organism.

In the final section of the book, we come to what could be solutions to the ongoing tension: ways in which the tower may be reconciled to the mountain, in which culture may be fulfilled without destroying life-supporting nature. Eisenberg rejects the extreme views of the so-called "planet fetishers" who argue for an impossible return to nature and the "planet managers" who see the earth of the future as a managed garden. Eden cannot be re-colonized without destroying it and wilderness will forever defy management. Rather, in this section entitled *Earth Jazz*, he argues for a flexible middle way in which we learn from nature itself how to improvise along with other species in a manner suggested by the musical analogy of the title. Many interesting examples of past accomplishments and future opportunities are presented, which end the book on a hopeful note but, to this reviewer at least, a somewhat wistful one.

The value of Eisenberg's book lies in setting a modern and very urgent challenge in its historic, cultural context. We see in current issues, and even in our own reactions to them, tensions that have beset humanity since it began its cultural ascent. Surely this ought to help us as we grope for a place in nature which can be sustained. Although the prose is beautifully constructed and sprinkled with touches of humour, this is not a book for light reading. It deserves careful consideration of the message that it carries and thoughtful reflection on how we may come to terms with our past in order to guarantee our future.

Reviewed by Taylor A. Steeves, 217 Poplar Crescent, Saskatoon, SK S7M 0A8

A Jewish curse goes,"May he inherit a hotel of a hundred rooms,
and be found dead in every one of them." For the heirs of Western civilization,
the curse seems to be coming true. We live in a first-class hotel,
a place of remarkable beauty and comfort, full of marble busts and leather-bound books;
yet in one room the tap water tastes of indeterminate chemicals,
in a second insects are dying in midair and plummeting to the floor,
in a third the temperature rises ominously and there is no way to open the window."

Evan Eisenberg, *The Ecology of Eden*

A BOUNTY OF BUTTERFLY BOOKS

Three butterfly books reviewed by Bernie Gollop, 2202 York Ave., Saskatoon SK S7J 1J1 • E-mail: mike.gollop@home.com

A FIELD GUIDE TO WESTERN BUTTERFLIES

Paul Opler and Amy Bartlett Wright. 1999. Houghton Mifflin, Boston. 540 pp., illus. 11.5x18.5 cm. Soft cover, $38.00. ISBN 0-395-79151-0.

When one hears that a new Peterson field guide is in preparation, expectations run high and another gem is impatiently anticipated. In May 1999 this book appeared and, horror of horrors, it turns out to be the first in the series that is a major disappointment.

The book covers Canada and the United States west of the 100th meridian, which includes the western quarter of Manitoba. This review concentrates on species found in Saskatchewan, although none of these is found here exclusively.

Introductory sections discuss butterfly life history, behaviour, watching, photography, gardening, conservation and distribution. The 44 plates of paintings are together from pages 34 through 121, with abbreviated text on the facing pages, followed by species accounts, life list, 6-page glossary, 57 references, 3 web sites, addresses for 5 butterfly houses (gardens) and 8 organizations and a 7-page index to nectar and caterpillar host plants. Sixteen endangered and threatened western US species are listed.

Plains Skipper on Gaillardia
Bernie Gollop

Page 29 has a map of "Biomes and habitats of western North America". The southern fifth of Saskatchewan is labelled "Great Plains". The remainder is "Taiga" — "low-lying willow and black spruce bogs and lakes". Saskatoon is floating well into the taiga!!!

A sampling of information from the introductory chapters: in summer, eggs hatch in a few days to a week; caterpillars grow through 4 or 5 moults in about 15 days; adults emerge after about 10 days in chrysalides and live from a few days to 2 weeks. Longer periods occur in all stages for all species when the last (sometimes the only) generation of the year survives part of the summer, winter and spring as egg, larva, pupa or adult. Mourning Cloaks that overwinter as adults live 10 to 11 months....Relatively few caterpillars feed in the open during broad daylight....Tiny parasitic wasps and flies parasitize most eggs and caterpillars....Duskywings sleep with their wings wrapped around a small twig.

The main part of the book, species accounts, includes one or two species per page with headings for description, similar species, early stages, food, flight period, range, habitat and remarks.

Treatments conclude with distribution maps and, for 109 species, a coloured photo of the adult, with a fairly lengthy legend.

Butterfly names are the same as in Butterflies of Canada (BOC) except that Least Skipper is referred to as Common Least Skipper, which is an improvement because there is a Tropical Least Skipper in the southwestern US. [5] As a result of Acmon Blue having been split into two species since BOC was published, former Acmons in Saskatchewan and Alberta are discussed and mapped as Lupine Blues.

The 3-colour distribution maps show resident and emigration (wandering) ranges and single records. The maps closely follow those in BOC, but single Saskatchewan records for Western Tiger Swallowtail (Saskatoon) and Eastern Tailed Blue (Gainsborough) are not shown.[5] The range for Summer Azure in both books is the same but it should be restricted to the southeast corner of the province. The larger range depicted was based on the false assumption that Spring Azures never have late summer broods. Common Checkered Skipper and White Admiral are residents, not immigrants, in the Prairie Provinces.

At first glance one is immediately struck by the fact that something is wrong with the paintings - the heart of this identification guide. Defining what is wrong is more difficult: maybe the wing veins are too prominent, especially in small butterflies; maybe the shapes of many adults are unfamiliar; maybe the colours of some are wrong; maybe all of the above. Another reviewer stated that "these particular paintings leave much to be desired....they are almost 'cartoonish' in their execution and in many cases do not provide details needed for field identification." [2] A birdwatcher's adjective was "peculiar". The paintings are grossly inferior to those in books by Opler in 1998, Howe in 1975 and Klotz in 1951. [6, 3, 4]

Nevertheless, pride is taken in the paintings because "In a first for a major North American field guide, the butterflies have been painted in natural postures" (p.2). This largely explains the unusual shapes – flying butterflies from above have forewings often significantly overlapping hindwings as seen from various angles – views so brief that the naked eye cannot isolate them.

Perched butterflies in natural positions are used to show the undersides of wings. This results in the hindwing often hiding key parts of the forewing. All previous field guides have appreciated that the beginning butterflier needs and is entitled to see what the entire animal looks like in order to have the best possible chance of interpreting characteristics from any angle.

All species on a plate are drawn to the same scale although they often do not look it, possibly because of different but similar postures. Species with white borders on the wings are depicted with a black line on the outer edge–giving a false impression of colour pattern.

This book's 16-year-old predecessor had 4 more plates–about half colour, half black-and-white photos of pinned specimens, and included 66 fewer species.[8] It averages 1.9 images per species compared to 1.6 in the present volume. The number of images per plate averages about the same: 21 and 22. So why do plates in the 1999 version seem so cluttered that figuring out which name goes with which image is sometimes a problem? The crowding is partly because the upper surfaces of many species show both left and right halves of the butterfly. Only one is

needed, as is the case for many other species and for all images of the undersides of wings. Another reason is the inclusion of more than 200 illustrations of caterpillars, pupae, flowers and other vegetation (for the perched adults) placed on the butterfly plates. All of this is most interesting but should not have been included until the primary purpose – identifying adults in western North America–had been achieved.

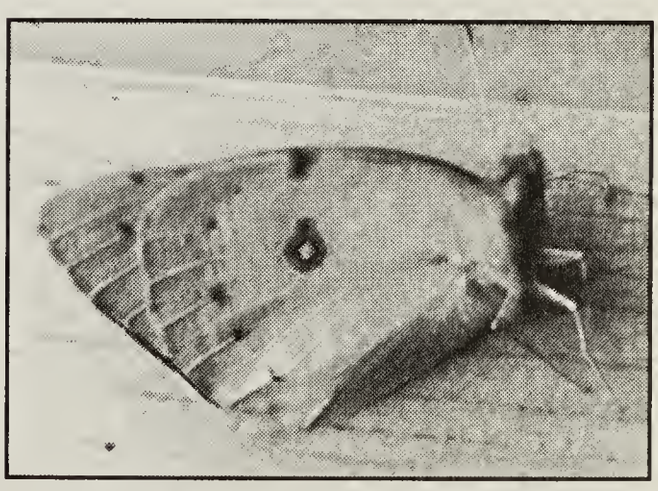
Opler devotes two pages to "Speciation and variation of western butterflies", pointing out the contrast between the east, where identifications are relatively easy, and the west, where "variation...has run rampant, and species distinctions in many groups are not clear–cut.... Lepidopterists who have studied western butterflies are often taken with the dramatic differences in the external appearance of adults from different areas and have made an immense effort to name these geographic subspecies. An extreme example, 36 subspecies of the Variable Checkerspot...in one recent checklist." Only three of these are shown here – none from Saskatchewan. Four subspecies of Old World Swallowtail (but not Saskatchewan's two) are shown and neither in this case, nor in most others, are subspecies' distributions given.

There is a major, basic, unforgiving flaw in the organization of this field guide, as well as its eastern counterpart. All images of a species should be together; in this field guide they are not. The observer, while watching a butterfly through binoculars, will first check the plates for identification. S/he may well have to take time to locate the accounts of several possible species to find out if any of these are accompanied by a photograph that may help in identification of the specimen s/he is still, hopefully, looking at. If more information is needed, the observer will then check the text. In the case of Juvenal's Duskywing (and maybe others) one is surprised to learn from the text that the only illustration in the guide is of a subspecies with a very restricted range and certainly not the one most likely to be encountered by most users of this field guide.

A final impediment: not all species are illustrated in the plates. A butterflier looking at an Indian Skipper is likely to identify it as something else because it and several other species are illustrated only in the species texts, with no indication of this in the appropriate plate. All of this is no way for a field guide to act, as the Old Master (who must be turning over in his grave) was fully aware in doing his bird guides.

Some authors of field guides seem to have forgotten that the beginning butterflier will be dismayed, if not disheartened, by discrepancies among images, their legends and species' texts, and that the old cliche about a picture and a thousand words very much applies.

Some of the questions and problems with specific groups and species in Saskatchewan are: What may well be our most common butterfly – Clouded

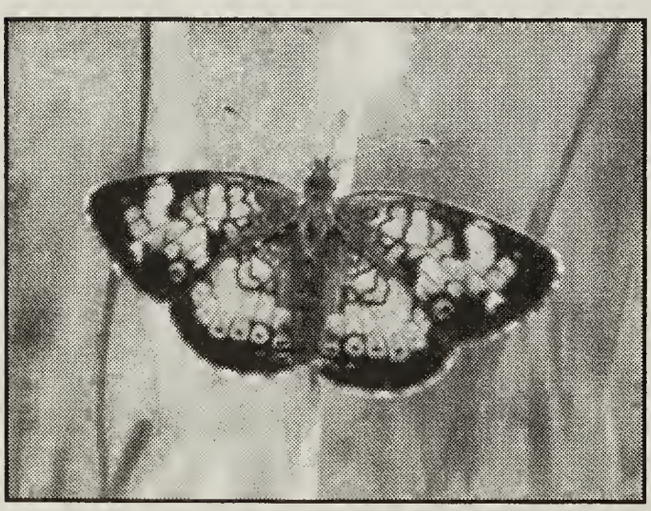


Clouded Sulphur with diagnostic submarginal spots clearly visible
Bernie Gollop

Sulphur – does not look like either of its two underside images on Plate 10 because neither shows the "small black submarginal spots" referred to and nowhere is it indicated that some specimens have green, not yellow, ventral hindwings....Purplish Copper: "Underside of hindwing orange brown..."(Plate 15); painting is a light gray....Juniper Hairstreak: hindwing "with two white antemedian spots"(p.217). I do not see these in the illustrations in Plate 17, nor do I see that five-syllable word labelled in Fig. 2 (not 3, as referred to on p. 8)....Western Tailed Blue in Plate 19 is actually an Eastern Tailed Blue.[2] ...The ventral hindwing of Peck's Skipper in no way resembles those in BOC, Alberta Butterflies (AB) or the eastern guide. [5, 1, 6]

Fritillaries: For this part of the world, many of the fritillaries are too yellow, not enough orange....For Zerene, the large basal disc on the underside of the hindwing in this book is described as brown-purple to pale yellow-brown and in BOC as pale to dark reddish brown. Semantics or regional differences?....The dark ventral hindwing disk of the Northwestern in Plate 24 does not apply to the subspecies outside the Cypress Hills.

Crescents: Unfortunately, this field guide will not help us identify our three species of crescents, the most difficult group to identify in Saskatchewan – and elsewhere in western North America, based on Opler's remarks under Northern Crescent (p.307). Only the upper sides of males are described (illustrated 220 pages apart), without letting the reader know how to tell male from female. The antennal clubs for crescents in western Canada are described as black for Pearl and Tawny and not mentioned for Northern. In BOC and AB, Pearl and Northern have orange on the clubs while the Tawny has black. [5, 1] The flight period differences reported do not apply to Saskatchewan and Alberta: Tawnies fly for a shorter period within the flight periods of the other two. The "male Pearl Crescent" in the photo on p. 306 looks much more like the male Northern than the male Pearl in Plate 28.



Crescent ***Anna Leighton***

Our six commas and five arctics receive better treatment in Opler's eastern guide, which presents different forms of Question Mark and Eastern Comma. [6] The uppersides of all arctics are illustrated in the eastern guide, none in the western. Even the key field mark given in the text for separating the Alberta Arctic from three similar Saskatchewan species is not illustrated because, in the "natural posture" for a perched arctic, the critical part of the under forewing is hidden by the hindwing.

Heath tried identifying duskywings and fritillaries in the southwestern US from this guide and found that some could not definitely be determined. [2] He concluded: "There are many, many errors that I'm sure will be corrected in the next edition." As well, many of the western species present major problems in identification and the time may be right for a Guide to Advanced Butterflying, which might include duskywings, large fritillaries, crescents, commas and some skippers for Saskatchewan.

Should you buy this book? The first book a Saskatchewan butterflier should have is The Butterflies of Canada ($30). Admittedly, it may be a pain in the neck to lug such a cumbersome book (22.5 x 28.0 cm) in the field but it comes far closer than any other to adequately treating (illustrations, text and maps) all of our species (reviewed in March/99 Blue Jay). [5] Unfortunately, the second best book for Saskatchewan comes in the same large format – Alberta Butterflies – but it omits 20 of our species (reviewed in September/95 Blue Jay). [1]

If you insist on a small-format guide, there is no good one. This one is certainly not it, but it may still be the best. It alone covers all Saskatchewan species, the text and maps are good and many of the images are adequate. Opler's better illustrated eastern guide is missing 24 Saskatchewan species. The old Audubon Society's guide is a candidate, but it does not illustrate 16 Saskatchewan species. [7] Another problem with it is knowing what species are meant by the author's unique names.. The best "field guide" for Saskatchewan butterflies is Butterflies of Canada.

1 Bird, C.D., G.J. Hilchie, N.G. Kondla, E.M. Pike & F.A.H. Sperling. 1995. Alberta butterflies. Provincial Museum of Alberta, Edmonton. 348 pp., illustrated..

2 Heath, Fred. 1999.(Book Review). American Butterflies. Vol. 7, No. 2: pp. 38-40.

3 Howe, W. H. 1975. The butterflies of North America. Doubleday, Garden City, NY. 633 pp., 97 plates.

4 Klotz, A. B. 1951. A field guide to the butterflies of North America, east of the Great Plains. Houghton Mifflin, Boston. 349 pp., 40 plates. (Peterson Series).

5 Layberry, R.A., P.W. Hall, & J.D. Lafontaine 1998. The butterflies of Canada. University of Toronto Press, Toronto. 280 pp. + 32 plates.

6 Opler, Paul & Vichai Malikul 1998. A field guide to eastern butterflies. Houghton Mifflin, Boston. 486 pp., 39 plates. (Peterson Series).

7 Pyle, R.M. 1981. The Audubon Society field guide to North American butterflies. Knopf, New York. 916 pp., 706 plates of adults, showing 983 images.

8 Tilden, J. W., & A. C. Smith. 1986. A field guide to western butterflies. Houghton Mifflin, Boston. 370 pp., 48 plates. (Peterson Series).

BUTTERFLIES THROUGH BINOCULARS – THE EAST
A field guide to the butterflies of eastern North America.

Jeffrey Glassberg. 1999. Oxford Univ. Press, Toronto. x + 242 pp + 71 plates + 71 facing pages of text. 41x21 cm. Soft cover $30.50 Cdn. ISBN 0-19-510668-7.

This is a very nice book. It illustrates 299 species in 625 excellent photos brilliantly reproduced with from 6 to 15 images per plate (grouped at the end). Where pertinent to identification, upper and lower surfaces, male and female are illustrated – usually two images per species, but up to five. All butterflies on a plate are to scale and most of many groups are at the same scale on successive pages.

Identification points and range maps face the plates. Small butterflies are shown larger than life (up to 2.5 times); these photos are particularly impressive. Large butterflies are illustrated down to half life-size. The western boundary runs from the eastern half of Texas through southern Manitoba (northern Canada

not included). The maps are unique in that three colours are used to show best guesses as to the number of broods, which often changes through a range. A fourth colour designates areas from which a species has been extirpated.

The general text includes sections on binoculars, finding butterflies, butterfly biology, gardening, conservation and photography. At the end are lists of organizations, a glossary, a bibliography of 80 titles and an index. The last 3 pages show silhouettes of the 18 species referred to in the text as guides to the size of each species. The only measurements in the book are for the forewings of the reference species.

Species treatments range from one to three per page under the headings: size, similar species, identification, habitat, range, abundance, major food plants and comments. Each concludes with a bar graph showing flight periods at one locality in each of four states: Wisconsin, New York, North Carolina and Louisiana.

Three quotations: Black Swallowtail: "Sometimes, eggs are laid even on parsley growing on the terraces of Manhattan's high-rise apartments."....Duskywings: " '... and rising up like a dark cloud–the duskywings spread across the land, sowing confusion and dissension among butterfliers...'"....Glassberg's comments under Northern Crescent are particularly warming: "I am not convinced that this is a valid species....Sure, if you look at individuals from northern Canada and Maryland, you can call them a Northern Crescent and a Pearl Crescent, respectively. But if you look at an individual from central New Hampshire, you can probably call it anything you want! This complex probably does not comfortably fit within the neat boxes we like to construct...."

The book has photos of eastern versions of 2/3 (107) of Saskatchewan's species, including the eastern rarities. It illustrates 24 of our 36 skippers and 11 of our 17 fritillaries. There are new identification clues which may apply to Saskatchewan individuals also.

Hopefully, Glassberg will do a western guide at least as good as this one.

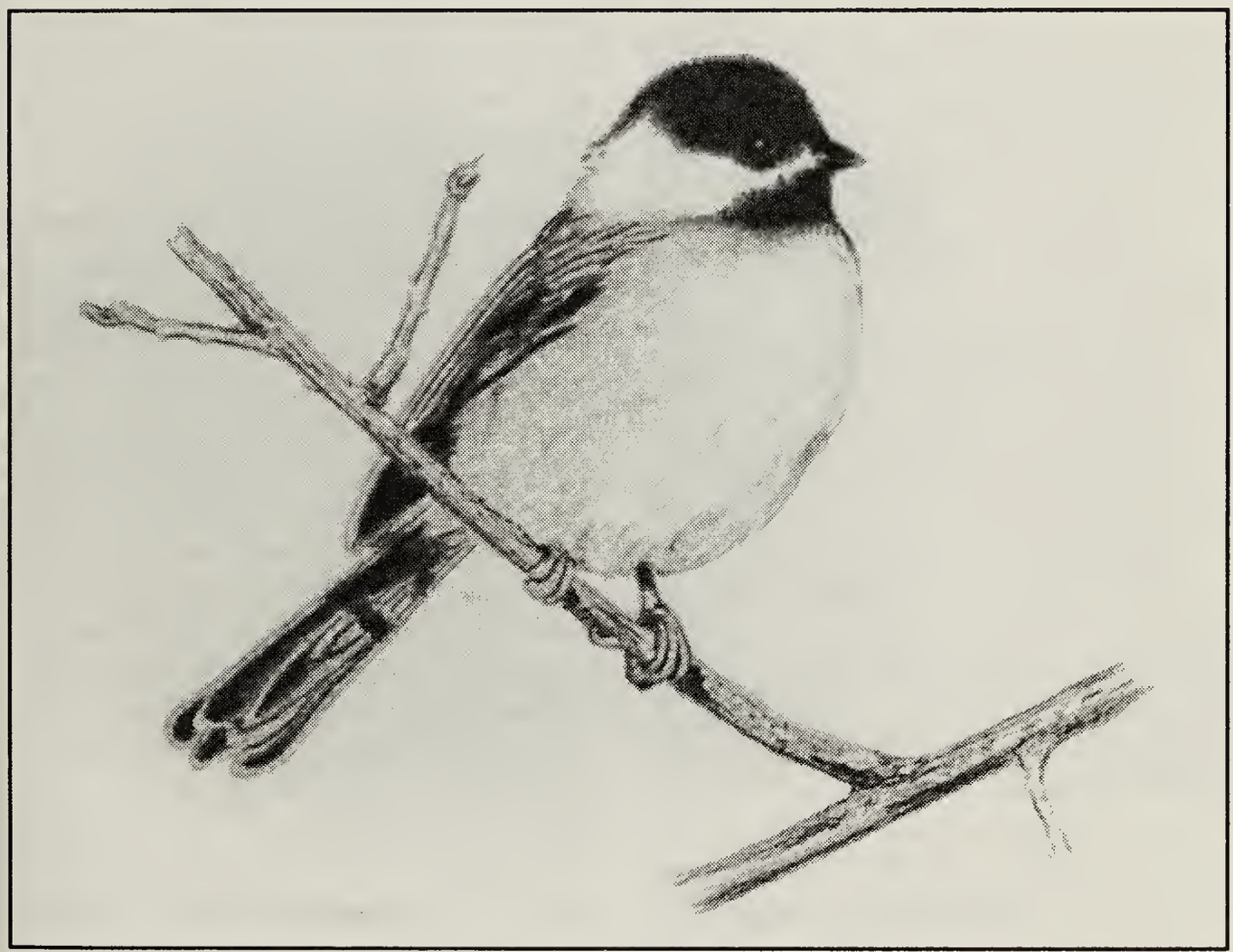
BUTTERFLY CONSERVATION (2nd ed.)

T. R. New. 1997. Oxford Univ. Press, Melbourne, Australia. 248 pp. 23 x 15 cm $47.95 Cdn.

This is a book of text, graphs, tables and maps on an international scale, written for the general public. The basic reasons for conserving butterflies are to save butterflies *per se* and because they serve as indicators of community or habitat "health". Speyeria butterflies (fritillaries) and their violet food plants are among the best indicator organisms of native undisturbed communities in North America. The chapters are: Butterflies-classification, diversity and biology.....Causes of butterfly decline.....Awareness and concern (national and international legislation)..... Studying butterflies for conservation (including marking, counting and habitat ranking).....Toward management of butterflies and habitats (including captive rearing and reintroductions).....Case histories in butterfly conservation (7 of 23 cases are North American, the only Canadian one being the Monarch)..... Butterflies in towns and gardens.....The future.

Sample information: How do butterflies occupy their day? Over a 3-year period male Chryxus Arctics spent 77% of their time resting, 12% in short flights, 10% protecting their territories from intruders and 1% feeding.

Appendices include the status categories of the International Union for the Conservation of Nature, an artificial diet for rearing caterpillars, a 45-term glossary and a 450± title bibliography (1/3 from the 1990s). All in all, an interesting book, supplying ideas and details for butterfly projects in field and garden.



Black-capped Chickadee ***Bob Brown***