SUGGESTIONS FROM THE BLUE JAY BOOKSHOP

(1) Order through THE BLUE JAY BOOKSHOP, P. O. Box 1121, Regina, Sask. S4P 3B4.
(2) Saskatchewan residents add 5% e. & h. tax.
(3) ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE.
(4) U. S. prices are indicated. Where the U. S. publisher has a Canadian representative, Canadian prices are about 20% higher. In some cases the Bookshop can buy direct from U. S. and U. K. publishers to avoid the Canadian markup. For more expensive books significant savings are possible. Inquiries are invited.
(5) 10% disc. from list price given all SUPPORTING and SUSTAINING members of SNHS, so when ordering IDENTIFY if eligible, EXCEPT: NO DISC. on books bought at retail or short disc. wholesale, nor on SPECIAL PRICE books, SNHS Special Publications, or orders under $5.00. All sales postage free.

EXHAUSTIVE BOOKS LISTS were included in "The Blue Jay" for the issues of June and September 1971, and the SNHS Newsletter of November 1972; please refer.

-o-

SNHS CREST DECAL: The crest of the Society in its official colours of blue, gold and black, is available as a car window decal - 35¢ each, 4 for $1.00.

HASTI-NOTES AND CHRISTMAS CARDS

Hasti-notes: (1) Birds at nest, colour, 10 (2 of each design) - $1.00
(2) Boreal Chickadee (design as page 109 "Birds of Lake Athabasca Region"), with envelopes; 12 for $1.00, 60 for $4.00.
(3) Floral Emblem and Scene: Saskatchewan Lily, Alberta Rose, Manitoba Crocus, or 1 each of 12 provinces and territories - $1.00 per pkt. of 12.

Xmas Cards: (1) Floral Emblem and Scene (as (3) above) with greeting; $1.00.
(2) Hawthorn Berries on Snow - Kodachrome by Doug Gilroy, 15 cards with envelopes $1.00.

NOTEPAPER AND CALENDARS

Notepaper: (1) Floral Emblem and Scene (as (3) above) $1.00

Calendars: (1) "Saskatchewan 1973" published by "The Western Producer" - out of print at the press but we have a small supply - $1.50 each.
(2) The Oxborough Calendar - 13 appealing faces of Canadian Indian children by Dorothy Oxborough, nationally known painter of Canada's Indian and Eskimo children - $1.25 each.
(3) Canadian Rockies calendar - 12 magnificent mountain scenes by Canada's finest photographers - $1.25 each.

BIRD BOOKS

BIRDS OF ARCTIC ALASKA by Alfred M. Bailey, $5.60, 317 pp., 100 photos. Dr. Bailey's experiences cover 25 years of collecting in the field. This book briefly describes more than 200 species in the area.

BIRDS OF ALASKA by Ira Gabrielson and F. C. Lincoln, $15.80 US, 933 pp., 10 col. pl, 1959. This is the definitive work on Alaskan birds, containing as it does detailed descriptions of all the region's species. Much other relative data.

BIRDS OF FLORIDA by George S. Fichter, $7.20, 1971, 114 pp., 57 photos (4 in col.), 230 drawings. This popular mecca for birdwatchers has come up with a bird book of its very own! If Florida is in your future this will be a useful addition to your reference library.

BIRDS OF GUATEMALA by Hugh C. Land, $10.00, 380 pp., 43 col. pl., range maps and country maps, 5½x7½. This small country has more than 660 species of birds. The late Dr. Land spent much time in the country, studying the bird life intensively. The book is sponsored by the International Committee for Bird Preservation, Pan-America Section.

BIRDS OF NORTH AFRICA by R. D. Etchecopar and F. Hue, $25.00. A magnificent, large, beautifully illustrated book dealing with the huge and varied region which is home to many species of birds.

BIRDS OF NORTH AMERICA AND HOW TO PHOTOGRAPH THEM by Perry Slocum, $12.95 US, 224 pp., 100 species in colour, with over 80 photos at nest. This book by one of the best photographers around, describes seven methods of bird photography. It has something for everyone who ever aimed a camera at a bird.

BIRD STUDY by Andrew J. Berger, $5.00, 400 pp., 176 illus., 1971 Dover reprint

BIRD STUDY (cont.)
of the 1961 ed. A handy guide for youngsters and other beginners, covering field identification, habitat preferences, song, courtship antics, nesting behaviour of many birds.
FIELD GUIDE TO THE BIRDS OF NEW ZEALAND by R. A. Falla and others, $8.50 US, 254 pp., 18 plates (6 in col.), maps, 1967, cloth. Not too many birders reach New Zealand but those who do will appreciate this excellent identification guide to the 200+ species there.
FIELD GUIDE TO THE BIRDS OF THE WEST INDIES by James Bond, $8.95 US, $11.00 Can. 1971 2nd ed. 256 pp. 94 birds in colour, 186 in b.w. More than 400 species described known to occur regularly in this popular vacation region.
GIFTS OF AN EAGLE by Kent Durden, $6.95, 159 pp., illus. Written with warmth and love, this book is a moving story of the relationship between Lady, a Golden Eagle, and the family with whom she lived for 16 years in southern Calif. The author writes: "The years with Lady were rich years. They left us with memories of a multitude of incidents that cover a broad spectrum of emotional experiences. Each of these enriched our lives immensely. . . they are gifts to us and now they are yours."
OKLAHOMA BIRDS by George M. Sutton, $12.50 US. A great American ornithologist presents all that is now known about the ecology and distribution of Okla. birds. 400+ species are discussed. A sound reference volume and an indispensable guide if this important area is in your birding future.
THE ORIGIN OF BIRDS by Gerhard Heilmann, $4.75, 216 pp., 143 illus. (Dover reprint 1972). This classic gives an excellent account of the origin of birds.
KEY TO NORTH AMERICAN WATERFOWL by S. R. Wylie & S. S. Furlong, $4.20. 32 pp. 48 col. paintings, many text drawings, 1972. This book is proving to be popular with outdoors people as it is printed on a waterproof plastic. It was intended to be always available to hunters, even in the rain, as the publisher says ". . . to help save rare species by encouraging the sportsman to learn the difference between a Fulvous Tree Duck and a Vulture!"
LIFE HISTORIES OF NORTH AMERICAN BIRDS by A. C. Bent; Dover reprints of these indispensable classics for bird students:

BIRDS OF PREY - Pt. 1 $4.75; Pt. 2 $4.75
BLACKBIRDS ORIOLES TANAGERS..... $5.75
CARDINALS AND OTHER FRINGILLIDS...
in three parts, each part..... $5.75
CUCKOOS GOATSUCKERS HUMMINGBIRDS
in two parts, each part..... $3.50
DIVING BIRDS..... $3.50
FLYCATCHERS LARKS SWALLOWS..... $3.50
GALLINACEOUS BIRDS..... $5.75
GULLS AND TERNS..... $3.50
JAYS CROWS AND TITMICE in two parts, each part.....$3.25
MARSH BIRDS..... $4.75
NUTHATCHES WRENS THRASHERS....$5.75
PETRELS AND PELICANS.....$4.75
SHORE BIRDS Pt. 1 $4.75, Pt.2.$4.75
THRUSHES AND KINGLETS.....$5.25
WAGTAILS SHRIKES AND VIREOS...$3.50
WILD FOWL Pt. 1 $3.50, Pt. 2..$3.50
WOOD WARBLERS Pt 1 $3.50,Pt.2.$3.50
WOODPECKERS.....$3.50

PLANT AND TREE BOOKS

CACTI OF THE SOUTHWEST: Texas, New Mexico, Oklahoma, Arkansas and Louisiana, by Del Weniger, $25.00 US, 328 pp., 183 col. photos, 9½x11½, 1972. A lovely new books to help those of us lucky enough to be able to explore the southwestern states when the cacti are blooming, but it is also for the cactus gardener as well as the cactus hunter. Dr. Weniger has given us a beautiful illustrated account of all the cacti found there. His work has the distinction of being the first detailed study to picture in full colour photos the cacti of the region which has long been noted for its many small and exquisite forms. The casual student will find identification of most easy from the illustrations and for the others there are detailed keys.
FORESTS OF NEPAL by J. D. A. Stainton, $17.50. Nepal remained almost completely closed to western travellers until 1949. The author was a member of an early British botanical expedition after which he continued on his own, and over the next 15 years made 18 journeys to the region. 7x10, 5 maps, 156 col.pl.
TREES OF NORTH AMERICA by C. Frank Brockman; cloth $6.95, limp $4.50, 280 pp. This is a field guide to the identification of 594 of some 865 species native to North America north of Mexico. Native woody plants that regularly attain a height of 20 feet are included as have major introduced and naturalized species but many others are mentioned. A companion to "Birds of North America" (same prices) it depicts species in full colour, with range maps.

PROTECT YOUR EXPENSIVE FIELD GUIDES! Limp-bound guides, if used extensively outdoors will not last as long as cloth-bound guides, but limps will last much longer if our heavy, clear plastic vinyl jackets cover them, while the cloths also have a similar but larger jacket designed for them. EACH JACKET: $1.25 but SPECIFY BINDING.

WILD FLOWERS OF THE PRAIRIES by J. B. Neufeld, $3.50, 28 pp. A fine book which has captured 28 prairie flowers in full colour reproduced with exceptional fidelity. A useful book as a field guide, a book of appreciation, and especially good as a gift for overseas friends. Each plate is accompanied by a short description and local and scientific names are given.
WILD FLOWERS OF THE WORLD: text by Brian D. Morley, 1,000 beautiful plants painted by Barbara Everard, $12.50, 432 pp., 9¼x12, SPECIAL PRICE $12.50. A beautiful and authoritative volume which describes a huge number of wild flowers from every region and climate of the earth. Precise scientific description is masterfully combined with information of an historical, anecdotal, and practical nature to create a definitive study of wild flowers. The 1,000 accurate paintings are exquisitely reproduced in 192 colour plates.

MAMMAL BOOKS

BABOON ECOLOGY, by Stuart Altmann and Jeanne Altmann, $12.00 US, 1971, 220 pp. illus. 7x9½. Baboons are among the most widespread, abundant, and adaptable of the primates. Like early man, baboons made a transition from an arboreal to a terrestial mode of life. This first complete study of baboons by one of the world's leading primatologists presents exciting advances in theory and methodology, and stimulating new hypotheses are put forward.
THE BOBCAT OF NORTH AMERICA by Stanley P. Young, $7.50 US, $9.50 Can. This is an outstanding addition to the author's distinguished writings as a biologist and Director of Bird and Mammal Laboratories, U. S. Fish and Wildlife Service. It is a complete scientific study of the Bobcat, interestingly spiced with anecdotes from the author's own experiences.
CHIPMUNK PORTRAIT by B. & H. Henish, $6.75, 98 pp., 45 photos, 28 drawings, cloth. An illustrated study of the delightful chipmunk, its discovery in America by early explorers, and its role in the art of the Indian. A scholarly book, extremely well written.
THE DEER AND THE TIGER: A Study of Wildlife in India, by Geo. B. Schaller, 1967 $10.00 US, 370 pp., illus. 6¼x9¼. A unique scientific report of free-living animals often hunted but seldom observed, and never before so accurately described - three kinds of deer, blackbuck, gaur and tiger.
DEER OF NORTH AMERICA by Walter P. Taylor (ed.), $12.50 US, $15.00 Can. 696 pp. 63 illus., including full colour reproductions of two originals by Walter A. Weber. This comprehensive volume summarizes many years of intimate study by leading experts and is the only modern book to cover fully the deer of North America. Anyone involved in wildlife will be appreciative of the valuable information contained in this book.
DEER OF THE WORLD by Kenneth Whitehead, $17.50, 176 pp., 7½x10. Of the forty living species of deer no less than fifteen are included in "The Red Book - Wildlife in Danger" ($19.00). Dr. Whitehead's book is, therefore, not only an important book of reference to the world's Cervidae, but also a book of very great value to the ever-increasing number of those involved in saving the world's vanishing wildlife.
LEMUR BEHAVIOR: A Madagascar field study, by Alison Jolly, $9.00 US, 1966, 187 pp., illus., 6¼x9¼. This field study gives a full description of the ecology and social behavior of two species of lemurs. This exemplary work consists of detailed observation of lemur behavior, both in troops and as individuals, in search of clues to the evolution of primate social behavior.
THE MANAGEMENT OF WILD MAMMALS IN CAPTIVITY by Lee S. Crandall, $15.00 US, 1964 761 pp., illus. 6¼x9¼. As the title indicates this book is aimed particularly at zoo managers and their staffs but should be on the shelves of all who keep wild mammals for any reason.
THE MOUNTAIN GORILLA: Ecology and Behavior, by Geo. B. Schaller, $11.00 US, 432 pp.,illus., 6¼x9½, 1963. The most complete study ever made of a free-living primate. This superbly documented report describes, tabulates, analyzes, and evaluates every aspect of a gorilla's life.
MOUNTAIN SHEEP: A Study in Behavior and Evolution, by V. Geist, $15.50 US, 1971 432 pp., 7x9½, illus., cloth. This is the scientific record of a unique first-hand field study of free-living mountain sheep. The close observation of these animals was done at all seasons by the author, who travelled for four years with bands of the various species of sheep in western Canada.
MUSKRATS AND MARSH MANAGEMENT by Paul L. Errington, $5.00 US, $6.00 Can. This book is an outgrowth of the author's 40-year interest and experiences in trapping muskrats and is intended to be informative, useful, add to the perspective of the reader, and influential in reducing abuses and waste in the harvesting of muskrats for fur.

THE SERENGETI LION: A Study of Predator-Prey Relations, by Geo. B. Schaller, $12.50 US, 1972, 472 pp., 24 pp. illus, cloth, 7x9½. This is the most comprehensive study ever made of the lion. The author's work, based on three years of study, describes the impact of the lion and other predators on the vast herds of prey species.

SOCIAL COMMUNICATION AMONG PRIMATES Ed. S. A. Altmann, $15.00 US, 1967, 392 pp 6¼x9¼. Contributors to this symposium have given us a most interesting volume on animal social behavior by means of papers of uniform high quality. Their presentations are clear, their documentation complete, and their theoretical discussions stimulating.

SOCIAL ORGANIZATION OF HAMADRYAS BABOONS: A Field Study, by Hans Kummer, $8.95 US, 1968, 189 pp., illus. This important field study provides the first accurate information about one species of free-living primates, the Hamadryas Baboon. This scientific monograph is for behavioral scientists and laymen interested in animal behavior. All critical events in Hamadryas society are documented by field photographs.

THE YEAR OF THE GORILLA by Geo. B. Schaller, $8.50 US cloth, $2.95 US paper. For those who enjoy reading of wild animals and primitive places, George Schaller has written an informal and exciting story of his two years of travel in East and Central Africa.

THE SPOTTED HYENA: A Study of Predation and Social Behavior, by Hans Kruuk, $15.00 US, 1972, 368 pp., illus. 6¼x9½, cloth. This thoroughly illustrated study constitutes the first substantial field research on hyenas. The author took 3½ years to examine every aspect of hyena behavior and its impact on ungulate populations.

A ZOO MAN'S NOTEBOOK, by Lee S. Crandall (in collaboration with Wm. Bridges), $4.95, 1966, 216 pp., illus. 6x9. General Curator emeritus of the New York Zoological Park, Mr. Crandall has worked for over 50 years with one of the world's largest captive collections of wild animals. This book has been hailed by biological scientists. The preservation of endangered species depends, as one approach, on the propagation in captivity of individuals, so we are all involved indirectly. A well written, appealing book.

OTHER NATURAL HISTORY BOOKS

ANIMAL BEHAVIOR by John Paul Scott (2nd ed. rev.), $12.50 US cloth, $3.25 US paper, 1972, 382 pp., illus. 5½x8½. The multi-disciplinary approach to animal behavior of the 1st ed. is augmented in the 2nd ed. by an updating of the material and a record of recent years of exciting growth in this increasingly important science. While the book is lively and entertaining it is also successfully used as a students' text.

ENCOUNTERS WITH ARCTIC ANIMALS by Fred Bruemmer, $17.35. This large, profusely illustrated book, in col. and b.w., looks at all the animal life forms of the Arctic basin. An excellent text, with superb pictures, the book has been widely acclaimed.

FROM APE TO ADAM by Herbert Wendt, $15.00 US, 292 illus. 19 in col. This is the story of the search for the ancestry of man, a unique word and picture look at 20 million years of our lives. It includes interpretations of the works of the most famous students of man, and illus. of tools, bones, weapons, ruins, cave paintings and sculptures.

THE FASCINATION OF REPTILES by Maurice Richardson, $10.00 US, illus. with 31 b.w. drawings and 8 col. pl. This is a warm and affectionage book about a subject on which few authors can be objective. It is first-rate reading for anyone with an interest in herpetology, and a long-needed work that may help to counteract some of man's most firmly established and unreasonable prejudices.

INTRODUCTION TO THE STUDY OF ANIMAL POPULATIONS by H. G. Andrewartha (2nd ed.) $7.50 US cloth, $3.25 US paper, 1971, 5½x8½. This study considers how environment determines an animal's chance to survive and reproduce, thus influencing the distribution and abundance of the population to which the animal belongs. At each step the theoretical considerations are illustrated by reference to ecological case histories.

METHODS OF COLLECTING AND PRESERVING VERTEBRATE ANIMALS by R. M. Anderson, $2.50 4th ed. rev. 1965, reprinted 1972, 199 pp., illustrated, paperbound.

NATURE'S HERITAGE, paperbound, $4.95. Canada's national parks, a complete picture story of the great natural heritage of these marvelous areas depicted in fascinating colour.

PHOTOGRAPHING WILDLIFE by J.-M. Baufle and J.-P. Varin, $15.00 US, 75 col. pl. A magnificently illus. indispensable guide for the nature photographer. It contains a wealth of material, from how to choose and use the right camera, lenses and film to building blinds and judging animal behavior. The text is enhanced with diagrams, tables and photographs that bring the subjects vividly to life. An authoritative and up-to-date volume.

should prevent cattle from entering the lakes, stop cultivating across creek beds, stop placing animal wastes in areas where the spring thaw will cause the material to enter the water system, and resist the temptation to apply fertiliser in the fall in areas where high run-off is likely to occur.

ACKNOWLEDGMENTS

The author would like to express sincere gratitude to the Qu'Appelle Basin Study Board and the Saskatchewan Research Council for financial support of this work; to members of the Qu'Appelle Study Board for the data relating to nutrient load and run-off which had been reported by other agencies; and to others who aided in many aspects of this study.

Note: At the time of going to press, the Qu'Appelle Basin Study Public Report was in the hands of the printers and was expected to be released before this article. Persons wishing to learn more of this study are urged to read this report which should be available through libraries.

The Blue Jay Bookshelf

FLORA OF THE PRAIRIE PROVINCES, PART III, Connatae. 1972. By Bernard Boivin. 224 pp. Issued as Provancheria #4, being Memoirs of the Louis-Marie Herbarium, Faculty of Agriculture, Laval University, Quebec City. Reprinted from Phytologia 22: 315-398 (1972) and 23:1 - 140 (1972). Available from the Blue Jay Bookshop, Box 1121, Regina, as are the preceding two parts.

This is the third of the four-part series on the flora of the three prairie provinces upon which Dr. Boivon has been working since 1949 at least. Part I was reviewed in this magazine, June, 1968; part II, September, 1969.

In Boivin's treatment of the subject, "Connatae" includes the bulk of what used to be called "Gamopetalous" or "Sympetalous Dicotyledons" those families of dicots in which the often showy corolla is built up of petals fused into one sheet of tissue. Among these, Ericaceae (Heath Family), being woody, was, along with its relatives, treated in Part I; Caprifoliaceae (Honeysuckles) was also included in Part I for the same reason; Primulaceae (Primrose Family) appeared in Part II among the polypetalous dicots. However, here in Part III we find the well-known families Solanaceae (Potato Family), Scrophulariaceae (Snapdragon Family), Polemoniaceae (Phloxes), Boraginaceae (Blue Bur Family), Labiatae (Mints), and Gentianaceae (Gentians), besides assorted smaller families. The mighty family Compositae (Sunflower Family) appears after these others and takes up over half the book. Because of the presence of Compositae in this part, a more than usual proportion of large, difficult, and controversial genera in which the species are often not clearly defined come up for treatment. These include *Solidago, Aster, Erigeron, Antennaria, Senecio, Arnica, Helianthus,* and *Artemisia.* On this matter Dr. Boivin has stated his strategy in the discussion of *Aster simplex* on pages 119-121.

The trouble with writing a book review is that one must pass over the 999 items out of 1000 which offer no scope for objections, for these items have been treated according to the highest standards of excellence; but one is obligated to pick out the one defect per thousand items. So it is with this review. Part III extends the work of its predecessor parts in giving us a complete, concise, and up-to-date flora of the Prairie Provinces, than which nothing more favourable need be said. But I noted a couple of errors, along with several items which will be found unusual by users of previous floras.

As for the errors: 1) There appears to be something seriously muddled in the primary key to the families of

Connatae, pages 1-3. Plants with an irregular spurred flower are referred to Group C in the preliminary parting into groups, but in the detailed key these plants are treated as Group D, Group C proving to be only a subdivision of Group B. Also, in that leg of the preliminary key dealing with plants with irregular unspurred flowers, those plants with opposite leaves are assigned to group D in the preliminary key but appear as Group F in the detailed key. Among the plants with irregular unspurred flowers, those with verticillate or wholly basal leaves seem to have been transferred from the opposite-leaved to the alternate-leaved groups between the preliminary and the detailed keys. This will need to be revised in future editions.

2) For the following species: *Hedeoma hispidum*, p. 68, *Plantago patagonica (P. purshii)*, p. 80; *Hymenoxys richardsonii*, pp. 163-164; and *Artemisia longifolia*, p. 174, the habitat in whole or part is given as wind-eroded steppes or badlands. However, in temperate climates getting over two inches of rain a year, and on all soils other than sand, water completely predominates over wind as an agent of erosion. Even on sandy soil, disturbance, as by herds of bison or cattle, or by ill-advised farming, is necessary to get anything noteworthy in the line of wind erosion in Western Canada. The hoodoos (erosion islands) of blowouts on sandy farmland in the 1930's bear a deceptive likeness to the hoodoos developed in the till along the South Saskatchewan River at Medicine Hat, or to larger scale badland erosion islands like Castle Butte in the Big Muddy, but the latter two instances have been carved by running water. The four species mentioned grow on eroded habitats, but these are water-eroded habitats no matter how physiologically dry the hill slopes. This may be understood most clearly for the last two species mentioned, for they grow on dry or eroded clay soils, *Hymenoxys richardsonii* mainly on till and *Artemisia longifolia* obligately on bedrock shales or clays.

Among items which may be found unconventional in *Flora of the Prairie Provinces, Part III*, are the lumping of *Lappula echinata* and *L. occidentalis;* the transfer of *Aster ptarmicoides* to *Solidago;* and the transfer of *Haplopappus nuttallii* to *Machaeranthera* as *M. grindeliodides* (Nutt.) Shinners. This last transfer seems unnatural to this reviewer, unless there be a series of connecting intermediate species south of us in the States.

We await the appearance of Part IV, Monopsida (Monocots) with interest; it will complete the work.—*John H. Hudson*, Saskatoon.

COMMON COULEE PLANTS OF SOUTHERN ALBERTA. 1972. By Job Kuijt. University of Lethbridge Production Services. xi plus 124 pp. $1.50. (Available from University Bookstore, Lethbridge).

"Long ignored by many as sterile and barren waste-lands, undisturbed coulees are places of great and subtle beauty. Yet, it has remained very difficult for the naturalist to identify the many colorful and unusual kinds of plants which grace the coulee slopes. This little book is written for such people." (Introduction, page v).

The amateur botanist will appreciate *Common Coulee Plants of Southern Alberta* for a number of reasons. Although there is no key to identify the plants, the author has divided the book into four sections based on the color of the flowers. For each plant he has provided an accurate line drawing; a visual method to determine the size of the plant; the general habitat; the flowering time; and in some cases the main differences between one plant and other similar species with which that plant may be easily confused. He also includes a numerical guide to flowering times which is helpful in identification of a species, for it aids the viewer to eliminate those species which flower at other times of the year.

This book does not list every species found in a coulee but, as the title suggests, the author is dealing only with common species. He has omitted those

species which he considers natural "interlopers," species from forests, and flora associated with permanent rivers such as poplars, willows, dogwood, birches, horsetails, etc. He has also excluded introduced weeds.

The studies on which *Common Coulee Plants of Southern Alberta* was based were conducted in a triangle of southern Alberta formed by three areas: Dinosaur Provincial Park, Lethbridge, and Writing-on-Stone Provincial Park, but the book probably applies equally well to all coulees in southern Alberta and southern Saskatchewan

This book will be extremely useful to beginning botanists. Those who desire more detailed scientific information will, as the author himself states, use the more technical books which are already available. It is unlikely that the binding on the book will stand up to rugged usage in the field; on the other hand, the price is very reasonable.—*Gwen J. Jones*, Regina.

EFFECTS OF PHOSPHAMIDON ON FOREST BIRDS IN NEW BRUNSWICK. 1972. By C. David Fowle. Canadian Wildlife Service Report Series No. 16. Information Canada, Ottawa. Catalogue No. CW 65-8/16. 25 pp $1.00.

Phosphamidon is an organophosphate compound and as such it is being scrutinized extensively as a substitute for DDT in insect control. The results cited in this report indicate drastic effects on birds above application rates (from aircraft) of greater than 0.25 per acre. Effectiveness of control of the target organism (the spruce budworm) at this level is not noted. The anticholinesterase activity and its nervous and physiological consequences) of dimethyl phosphate esters is the basis of their hazard for all animals; and birds and man are by no means excepted from their impact. It is the opinion of the reviewer that information of the type in this report should be published in an appropriate scientific journal, or at least submitted for publication at the same time as it appears in a report of this sort. However, the Canadian Wildlife Service is to be commended for making their research findings available to a larger group of readers in this form.

The experiments described in the report were initiated after the author observed that a number of forest birds were killed or disabled in earlier spruce budworm control with phosphamidon at the rate of 0.45 lb. per acre. A tract of 161,000 acres was sprayed in the earlier experiment and the number and range of species noted as killed or disabled in this report suggests that a fantastic kill of forest birds took place. Insectivorous birds were the most common victims, but species of diverse feeding habits (robins, kinglets, sparrows, grosbeaks, thrushes, warblers, juncos, wood peewees, sapsuckers, ruffed grouse, blue jays, purple finches, nuthatches) were affected. Reference is made to an earlier series of experiments which demonstrated that birds which move actively about on sprayed branches may pick up a lethal dose of phosphamidon by absorption through their feet. (Not all biologists believe that this is possible.)

An economic resource such as timber is worthy of careful management and protection from disease and insect damage. Still, the effects on bird populations here reported raise some concern about the adequacy of testing of phosphamidon before its use, and about the ecological soundness of its use *at all* if one of the consequences is this level of destruction of forest birds. As Lee M. Talbot (*Bioscience*, March 15, 1970, p. 331) has noted and many others have echoed in recent years: "We still know so little about the ecology of the earth that we are not yet in a position to define the role of most living species and therefore to evaluate their significance to our own life support system."

The study described in the report may still be considered only a beginning in the evaluation of the effects of phosphamidon on vertebrates. The nature of the study points to the need

for further independent investigation before initiation of use of organophosphates; and there should be an independent monitoring of effects of the chemical during use. Notably absent in this report are post mortem findings and description of the actual physiological effects of phosphamidon. More replication of plots on each treatment and suitable statistical tests of significance would improve the support of the following conclusions:

"1. Operational aerial spraying of phosphamidon at emission rates of 0.375 - 0.5 lb. per acre may result in substantial mortality of forest birds. Lower doses of about 0.25 lb. per acre may occasionally cause losses. Sprays with a high proportion of fine evenly dispersed droplets may do more damage than those with fewer fine droplets.

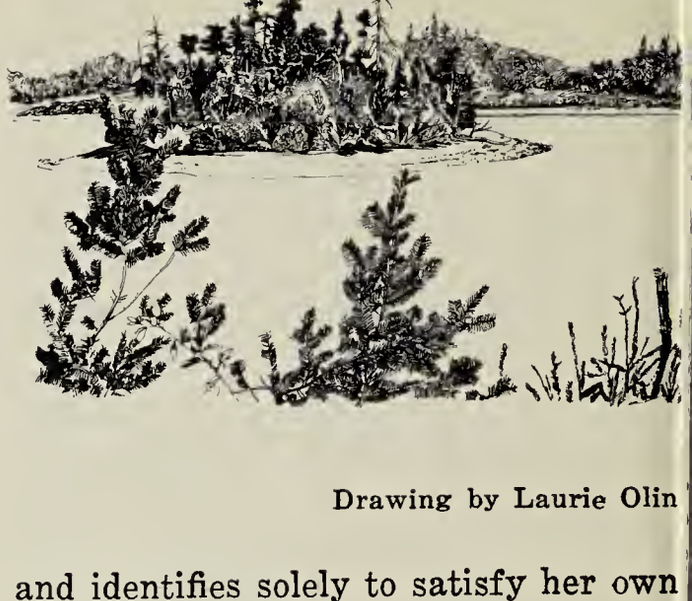
"2. Birds can pick up lethal or debilitating doses from sprayed vegetation through their feet.

"3. Birds may be poisoned by eating sprayed food soon after spraying. Doses of 1 to 3 mg/kg of active ingredient are sufficient to kill common forest birds."

On the whole, the report suggests that phosphamidon may seriously affect forest birds. Another organophosphate, lannate, has been used extensively in Saskatchewan and I suggest that its effects on non-target organisms should be carefully scrutinized.—*J. R. Jowsey*, Regina.

ISLAND YEAR. 1971. By Hazel Heckman. Drawings by Laurie Olin. University of Washington Press, Seattle and London. 255 pp. $7.95 U.S.A.

In *Island Year* Hazel Heckman has recorded her observations of the flora and fauna seen on Anderson Island, off the coast of Washington, during a period of twenty years of wandering over the trails. Though a list of plant names and bird names is given, the author states that the book is not intended to be a field guide to the flora and fauna of the island. She explains, rather, that she explores for pleasure



Drawing by Laurie Olin

and identifies solely to satisfy her own curiosity.

Through each month of the year she takes the reader on walks along trails on the island, and the reader sees through her eyes the joys of nature. Her feeling of yearly anticipation is recorded when she says, "Each afternoon in February I went in search of spring — the stir of new life beginning."

Hazel Heckman delights in figurative descriptions: "crisp white bracts of Pacific dogwood like fresh, starched doilies appeared overnight"; "Deer browse in tall grass, unseen, or rest in the sun in flattened round rooms with hay walls." Much use is made, too, of alliteration: "A two-point buck deer lifted his head, gave me a curious look from his limpid, long-lashed eyes and went back to his browse." Such sentences make the book pleasant reading.

The drawings, of varying quality, serve to break the text at suitable points and aid in giving *Island Year* an attractive format.

The book closes on a sad note. Trails the Islanders have wandered and enjoyed for years are now being exposed to the bulldozer: "A network of wide-slashed roads that go nowhere . . . shorelines cleared of wild iris and cattails for swimming and boat launching . . . mile upon mile of parking strips . . . The wilderness erodes." One echoes the words of Hazel Heckman when she concludes *Island Year* with the statement: "We can not shrug this off as *progress*."—*Connie Pratt*, Regina.

BUFFLEHEADS. 1971. By Anthony J. Erskine. Canadian Wildlife Service Monograph Series No. 4, Information Canada, Ottawa. 240 pp. $7.50.

The relative scarcity of information on Buffleheads in the abundant literature on waterfowl is well illustrated in the Reference Section of this interesting and well-written book; only 19 of the 210 titles listed specifically mention Buffleheads. The diversity of the listed titles also underscores the value of the book as a compendium of available knowledge on Buffleheads. In addition, the book contains much original and previously unpublished data.

The first two chapters dealing with behaviour of Buffleheads mainly summarize the work of other authors, although Erskine adds some original data on group sizes and chronology of pair formation in Buffleheads.

The chapters on biology of Buffleheads on the breeding grounds deal mainly with the studies of Erskine and Sugden in British Columbia during the summers of 1958-62. An amazing amount of new information is presented on this relatively uncommon species but the data interpretations are unfortunately hampered by the absence of marked birds in the studied populations.

The section on fall migration is mainly a thorough and detailed analysis of banding records. In my opinion, scientific etiquette should require acknowledgment of banders when bird recovery data are used, even though permission to use the data has been granted. This is apparently a minority view because banders are not acknowledged in many recent papers dealing with bird band recoveries.

The portions of the book which deal with harvest distribution and populations are excellent assimilations of information from diverse and often obscure sources. They rely heavily on information from the U.S. Department of the Interior Waterfowl Status Reports for which, unfortunately, editors and authors are not cited.

In the introduction, Erskine asserts that he was ". . . intrigued to learn what factors set limits to its [the Bufflehead] distribution and abundance." These factors are thoroughly discussed in Chapter Eight. It is not surprising that no firm conclusions are presented because, as Erskine admits, "there are many easier birds to study than buffleheads."

The thorough and comprehensive text of the book is well complemented by the excellent figures and tables which are uniformly clear and concise. Those data not especially pertinent to the text are relegated to appendices.

Most ornithologists, biologists and naturalists will want to add this well-written book to their collections, and its price should present no obstacle. Serious bird-watchers especially interested in waterfowl will find a wealth of information on one of our lesser-known waterfowl species in this publication.—*D. H. Rusch,* Winnipeg.

LEARNING ABOUT ENVIRONMENT. 1972. An ecology unit for students at the intermediate and senior levels of the elementary school program. $1.50. Accompanying teachers manual. $1.50. By Robert F. Harrington and Richard C. Passmore. Published for Canadian Wildlife Federation by Carlton - Green Publishing Company Ltd., Ottawa.

Environmental quality has been a matter of increasing concern during the past decade, and a great deal of information has been presented in the various public media. Words and terms once the exclusive possession of the "expert" now slide easily off the tongue of the general public. However, knowing the jargon does not necessarily imply a knowledge of the basic principles. In a number of cases well-meaning enthusiasts have seriously harmed the cause of environmental stability by overstating their case, or by offering "instant solutions" to problems which were seen in the wisdom of hindsight to require much deeper study.

The authors are well aware of such dangers, and carefully and attractively build up a background of basic facts

and attitudes, on which the student may expand his awareness. The examples in the study unit and its accompanying guide are relevant and well-researched. The intricacies of relationships are well-portrayed. Even more commendably, the dilemma of the dedicated ecologist is sympathetically explored. The importance of reserving judgment until at least the major interrelationships have been clarified is emphasized. This is a particularly valuable concept to develop in the upper elementary grades, where there is a tendency to assume that there is a "false" and a "correct" answer to any given problem. Is there in fact such a thing as a "bad" animal and a "good" animal? Are things always what they seem to be?

One section I found of particular interest was the development of the concept of stability through diversity. Children born in the mechanized farm economy of today accept the sight of mile after mile of wheat as something altogether natural and unchangeable. The concept that such a monoculture is not natural and presents some very serious threats to ecological stability comes as something of a shock to them. We are all prone to think of ecological mismanagement as something "the other fellow" does and something for which "the other fellow" is responsible. As long as species extinction and pollution are things which concern some other society, so long will the ecological message fall on deaf or indifferent ears. The thoroughly Canadian content of text and illustrations produces this sense of relevance. The presentation is suitable for upper elementary grades and should also be quite applicable to secondary school courses.

The avowed intent of the production is to provide a teachable block of material which will provide students with an understanding of their environment and their own role in it. In this it appears to succeed. Unnecessary complexities are avoided, but there is little tendency to over-simplify. There is no doom-crying, but a reasoned and appealing call to concern and action. In the words of Francis Bacon, "He who would command nature must first learn to obey her." Man has broken little rules for many years and now some of the big rules are beginning to catch up with him. The thoughtful student will gain from this unit a clearer grasp of the rules by which he must play for the rest of his life.—*W. A. Quick*, Regina.

EFFECTS OF DEER AND DOMESTIC LIVESTOCK ON ASPEN REGENERATION IN UTAH. 1972. By Arthur D. Smith, Paul A. Lucas, Calvin O. Baker and George W. Scotter. Publication No. 72-1. Utah Division of Wildlife Resources. Illus. 32 pp.

The stated objective of the project described in this study was to test the belief that big-game animals prevent regeneration of aspen in Utah. Studies were conducted on four sites with clear-cutting, partial cutting, soil scarification, and girdling of the aspen. Fences were employed at two sites in an attempt to determine effects of grazing by deer alone, sheep and cattle, deer and cattle, and deer plus sheep.

With all of these parameters to confuse the results it is only the determined researcher or dedicated amateur who will attempt to read this publication to its end.

Experienced farmers or ranchers would concur with the findings that sheep are more damaging to plants than cattle. (Their dentition is more efficient in this respect.) Soils and climatic data are almost overlooked; breccia and conglomerates seem to provide harsh conditions. Game populations were apparently so light as to make comparisons with domestic animals meaningless.

The sincerity of the authors seems unquestionable as they have tried to interpret their data with bar charts and tables. One regrets, however, that the paper does not include more than three of their good quality photographs.—*Thomas R. Smith*, Saskatoon.

COYOTE MANAGEMENT

Many of Saskatchewan's municipalities are currently considering the question of whether or not to participate this winter in the Department of Natural Resources' coyote baiting program. Being concerned that municipal councils might hear only about damage that coyotes might cause and hoping that the article "Coyote management in Saskatchewan: Is poison the answer?" would provide another viewpoint for consideration, I sent copies of the September 1972 *Blue Jay* to the municipalities and local improvement districts which used bait last year, at the same time asking for information about the local coyote situation. This amounted to 58 R.M.'s and L.I.D.'s (out of a total of just over 300) with an average of 5 baits in each. Two stations were set by DNR in Moose Mountain Provincial Park. In addition, about 100 baits were set by the South Saskatchewan Wool Growers' Association in about 16 R.M.'s and L.I.D.'s. I consider this a minimum list, since one regional superintendent stated in a letter that in addition to the stations in the R.M.'s listed, "some baits were placed on request by land owners who had specific problems with coyotes, e.g. sheep ranchers, poultry raisers, etc."

I have received several letters from secretary-treasurers of the R.M.'s which are of interest. Two councils do not agree to participation in the poison program but the Saskatchewan Department of Agriculture independently places three bait stations in both municipalities, in government sheep pastures. The consensus of the coyote situation so far is that although calves may be somewhat vulnerable, sheep ranchers are the only ones who encounter significant financial losses to coyotes.

A most informative letter was sent by a turkey farmer of the Wynyard area. He contends that turkey losses are strictly a management factor because coyotes will not go inside a proper fence but will take those allowed to stray over the fence. He described a situation (which occurred a number of years ago) in which more than a dozen coyotes frequented a disposal pit for entrails etc. and yet he had no trouble from them. When this food supply was removed by the filling in of the pit, the coyotes moved on rather than turning to the turkeys for food. The more recent marked reduction in coyote numbers he attributes to the activities of the owners of motor toboggans — one local operator is credited with getting 50 or more coyotes. Last year this farmer experienced fox trouble for the first time. This was a factor in his decision to close down one farm, and because of a loss this year of 450 turkeys (at $3-$7 apiece) a second farm is being abandoned. Here seems to be an example of the value (in this case financial) of the coyote as a balance to the fox population.

This farmer notes further that a coyote kill of a turkey is distinctive. Is this true also, I wonder, for calves and lambs? I would appreciate hearing of other readers' experiences.

In response to the *Blue Jay* article, a letter from the Minister of Natural Resources, Hon. Ted Bowerman, expresses concern about 1080 poison as well as the need to consider agricultural interests. Although he agrees that changes have occurred since the poison program was initiated and review is both needed and planned, he is awaiting the outcome of the study by the ecologists in his department — no date was given.

Perhaps it is too much to hope that poisoning can be replaced by trapping and/or financial compensation in the near future or even that poisoning can be limited to sheep farmers. But surely it is not too rash to restrict the use of poison to cases of proven coyote damage. I hope that all rural readers will request this of their municipal councils. — *Nora M. Stewart*, Craven.

Editor's Note: "Perspective on wolf control in Quebec" the first special publication of The Canadian Nature Federation, 46 Elgin Street, Ottawa, price one dollar, reviews the history of wolf and coyote control in Quebec and states that the CNF "is unequivocally opposed to the use of poisons against wildlife."