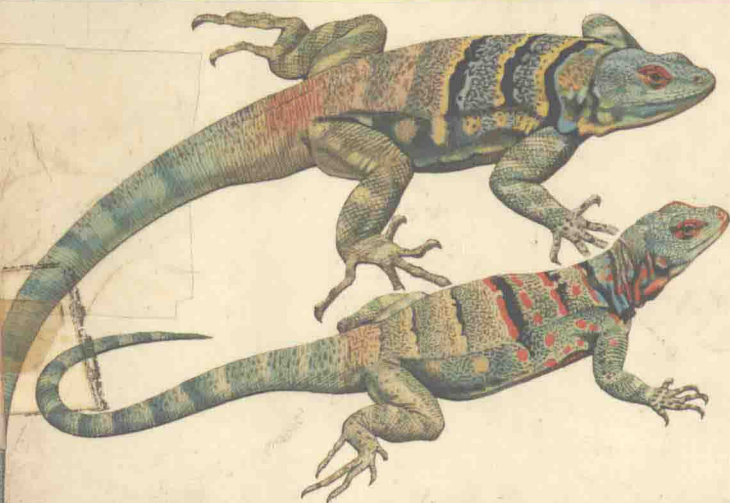


THE PETERSON FIELD GUIDE SERIES

# A FIELD GUIDE TO WESTERN REPTILES AND AMPHIBIANS

SECOND EDITION, REVISED

ROBERT C. STEBBINS



SPONSORED BY THE NATIONAL AUDUBON SOCIETY  
AND THE NATIONAL WILDLIFE FEDERATION

THE PETERSON FIELD GUIDE SERIES

# A Field Guide to Western Reptiles and Amphibians

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Field marks of all species  
in western North America,  
including Baja California

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*Text and Illustrations by*

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*Sponsored by the National Audubon Society  
and National Wildlife Federation*

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and Savage*

## Editor's Note

Robert Stebbins' classic *Field Guide to Western Reptiles and Amphibians*, first published in 1966, has been hailed as one of the most beautiful as well as one of the most scholarly books in the Field Guide Series. As I pointed out in my Editor's Note in that earlier edition, the bottleneck in the preparation of most Field Guides is the problem of illustration. There are competent field specialists to write such guides and a lesser number of competent illustrators, but to find an author who is equally skilled both as a biologist and as a biological illustrator is extremely rare. Such a man is Robert Stebbins. The reproductions in this book, though excellent examples of the engraver's art, cannot fully record the delicacy of detail and loving care that went into the originals.

During the last two decades a great deal of new information about western reptiles and amphibians has accumulated and the science of herpetology is becoming increasingly sophisticated. Dr. Stebbins shares this new knowledge and his expertise in this 1985 edition. There are now 48 plates (35 in color); a dozen of these are new. In the 1966 edition there were 39 plates (24 in color). A total of 244 species are now described, 239 of which are illustrated. In addition, 260 subspecies are described and 31 of the most distinctive are illustrated. There are several additional line drawings in the text. The book includes a total of 601 separate illustrations, 245 in color. In addition there are 200 distribution maps.

Among the other important new features: All species of amphibians and reptiles found on mainland Baja California are now covered. Information on reproduction in reptiles is now included — clutch (or litter) size, as well as frequency and time of laying.

During the International Galapagos Expedition of 1964 I was privileged to share quarters with Dr. Stebbins at Academy Bay in the Galapagos Archipelago. It was there that I first realized what a perfectionist he is, a demon for work. He had chosen as one of his projects the function of the parietal, or third, eye in the Lava Lizard, *Tropidurus*. A thorough man, he spent five weeks patrolling the coral-strewn paths in the immediate vicinity of the station between the dormitories and the landing. While the rest of us were enjoying high adventure on the more remote islands and sea-girt rocks, he patiently snared 200 frisky lizards with a noose of thread suspended from a rod. He took their cloacal temperatures, marked

them with dye, and then dosed them with radioactive iodine, which enabled him to locate the elusive reptiles later with a Geiger counter. From dawn to dark he charted their activities, saw them wake in the morning, followed their daily routine, and by means of the clicking Geiger counter, discovered where they spent the night.

He performed simple surgery on one group of lizards, deftly removing the minute "third eye," a fleck of tissue on the forehead, to observe the effect on their daily activities. Whenever a lizard with a purple leg darted across our path, we knew we were seeing one of Dr. Stebbins' subjects.

It was with the same devotion to detail and relentless singleness of purpose that Dr. Stebbins tackled the long and exacting task of preparing the text, range maps, and illustrations for this manual — No. 16 in the Field Guide Series — and its revision.

Recognition is step number one in any branch of natural science. That is why the Field Guide Series was launched — as a shortcut to recognizing and naming the multitude of living things which populate North America, a *Who's Who* of the outdoors. The first volume to appear, *A Field Guide to the Birds*, met with instant success. This was followed by guides to other groups of animals and plants, including Roger Conant's splendid *Field Guide to Reptiles and Amphibians of Eastern and Central North America*.

This *Field Guide* supplements Roger Conant's book, which stops at the 100th meridian (except in west Texas). Between the eastern borders of New Mexico, Colorado, Wyoming, Montana, and Saskatchewan north (the eastern limits of the present book, or, roughly, the 103rd meridian), there is a blend zone — a "twilight zone" — where eastern and western influences intermingle. Here the student should carry both *Field Guides*.

The West may not be as rich as the East in salamanders and turtles, but it makes up for this deficiency in its wealth of lizards and snakes, particularly in the diversified terrain of the arid Southwest. Some species are local and rare; all are exciting to the field naturalist.

When you travel, take this handbook with you in your jacket pocket, backpack, briefcase, or in your car. Do not leave it home on the library shelf; it is a Field Guide, intended to be used.

Roger Tory Peterson

## Acknowledgments

It is with deep gratitude that I acknowledge the contribution of many persons to the preparation of this 2nd edition of this *Field Guide*. I am especially grateful to Charles H. Lowe and John W. Wright, who reviewed all the accounts of species and the distribution maps, offering many corrections and helpful suggestions. Professor Lowe gave generously of his unpublished information on southwestern herpetology, and the book has been greatly improved by his important contributions. He also procured live reptiles for use in the preparation of new color plates. In addition to his general assistance on the text and distribution maps, John W. Wright provided special help on the accounts and distribution of the whiptail lizards and supplied live animals for the color plates of these lizards. Theodore J. Papenfuss and Robert L. Seib encouraged me to expand the coverage of Baja California; their extensive knowledge of that region was invaluable in the preparation of the maps and species accounts. I would not have attempted to cover Baja California without their help. I have also been given excellent assistance on Baja California herpetology by Richard B. Loomis, Robert W. Murphy, Norman C. Roberts, and Hartwell H. Welsh, Jr. I am grateful to the Mexican government for allowing me to collect amphibians and reptiles in Mexico.

Many people have helped in the preparation of the distribution maps, reviewed sections of manuscript, or contributed in other ways. Geographic areas or taxonomic groups to which some of them have given special attention appear in parentheses. They are: John S. Applegarth (sw. U.S. and New Mexico); Stevan J. Arnold; Andrew H. Barnum (Utah); Harold E. Basey; George T. Baxter (Wyoming); Kristin H. Berry; Jeffrey H. Black (nw. U.S.); Charles M. Bogert (patch-nosed snakes); Jeff J. Boundy (cen. California); Bayard H. Brattstrom; John M. Brode; Ted L. Brown (New Mexico); R. Bruce Bury; Stephen D. Busack; R. Wayne Campbell (Canada); James P. Collins; Charles J. Cole; Joseph F. Copp (sand snakes); Francis R. Cook; James W. Cornett; Blair Csuti (California); William G. Degenhardt (New Mexico); Dorothy M. DeLisle; Benjamin E. Dial; Philip C. Dumas (nw. U.S.); Jim W. Grace (Guadalupe Mts.); Denzel E. Ferguson; Henry S. Fitch; Darrel Frost (sw. U.S.); John S. Frost (leopard frogs); David Good (alligator lizards); David Green (Canada); Frederick R. Gehlbach (New Mexico); Geoffrey A. Hammerson (Colorado); Robert W. Hansen

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Roger and Isabelle Conant, creators of the eastern *Field Guide to Reptiles and Amphibians*, kindly allowed me to use their original map format in the preparation of western distributions.

The McGraw-Hill Book Company and the University of California Press generously allowed me to use illustrations from *Amphibians and Reptiles of Western North America* (McGraw-Hill, 1954), *Amphibians of Western North America* (University of California Press, 1951), and *Reptiles and Amphibians of the San Francisco Bay Region* (University of California Press, 1959). These illustrations are identified on p. xiv. Charles J. Cole provided drawings of the hemipenes of Black-headed Snakes (Fig. 30). Most of the drawings of frog eggs are based on "A Synoptic Key to the Salientian Eggs of the United States" by Robert L. Livezey and Albert H. Wright (Amer. Mid. Nat. 37 (1): 179-222). The map of natural vegetation of the western United States (pp. 282-283), is adapted from H. L. Shantz and R. Zon, 1924, U.S. Dept. Agric., Atlas Amer. Agric., Sect. E. and that for Baja California (p. 284), from D.I. Axelrod, 1979, Occas. Papers Calif. Acad. Sci. 132. Full color prints of paintings by the author of some of the amphibians and reptiles described in this book, shown in their natural habitats, are available from *Wildlife Impressions*, P.O. Box 11440, Eugene, OR 97440. Information sent on request.



David Wake, director of the Museum of Vertebrate Zoology and fellow herpetologist, reviewed the section on amphibians and has been a source of encouragement, advice, and information throughout the preparation of this revision. Harry Greene, Associate Curator in Herpetology, Museum of Vertebrate Zoology, offered many valuable suggestions for the section on reptiles. Nathan W. Cohen, dear friend and companion on many field trips and photographer par excellence, helped in many ways to bring this new version to completion.

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Special thanks go to my children — John, Melinda, and Mary — whose interest in animals helped motivate me, and to my wife, Anna-rose, who typed the manuscript, helped with the artwork on the distribution maps, and who for many years graciously coped with frogs in her refrigerator, snakes in the living room, and tortoises on the sundeck.

Robert C. Stebbins

To the late  
Raymond B. Cowles,  
mentor and friend

# Illustrations

## *Line illustrations*

Front Endpapers: Salamanders, Frogs, Turtles

Rear Endpapers: Lizards and Snakes

Figures 1-40, distributed throughout the book

Map of Area Covered

*facing p. 1*

Vegetation Maps

*following p. 281*

Range Maps

*following p. 284*

## *Plates (grouped after p. 158)*

1. Newts and Dicamptodontids (color)
2. Ambystomatids (color)
3. *Ensatina* (color)
4. *Ensatina* (color)
5. Woodland Salamanders (color)
6. Climbing, Slender, and Web-toed Salamanders (color)
7. Climbing and Slender Salamanders
8. Slender Salamanders (color)
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10. True and Spadefoot Toads (color)
11. True Toads (color)
12. True Toads and Leptodactylid Frogs
13. True Frogs
14. True Frogs (color)
15. Leopard Frogs (color)
16. Great Plains Narrow-mouthed Toad, Treefrogs, and Tailed Frog (color)
17. Turtles
18. Turtles
19. Sea Turtles

- 
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  22. Earless and Zebra-tailed Lizards (color)
  23. Fringe-toed Lizards (color)
  24. Leopard and Collared Lizards; Desert Iguana (color)
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  26. Spiny Lizards (color)
  27. Spiny Lizards (color)
  28. Skinks (color)
  29. Alligator Lizards (color)
  30. Night Lizards
  31. Whiptails (color)
  32. Whiptails (color)
  33. Whiptails (color)
  34. Whiptails and Legless Lizards (color)
  35. Geckos (color)
  36. Blind Snakes, Boas, and Racers (color)
  37. Coral and Long-nosed Snakes, Kingsnakes, Black-headed and Ringneck Snakes (color)
  38. Shovel-nosed, Ground, and Rat Snakes (color)
  39. Gopher, Glossy, Sharp-tailed, Green, Lyre, and Night Snakes (color)
  40. Hognose, Leaf-nosed, Patch-nosed, Hook-nosed, and Vine Snakes
  41. Black-headed, Lined, and Red-bellied Snakes
  42. Garter Snakes (color)
  43. Garter and Water Snakes (color)
  44. Rattlesnakes (color)
  45. Rattlesnakes (color)
  46. Baja California Lizards (color)
  47. Baja California Lizards (color)
  48. Baja California Snakes

## *Credits for Use of Illustrations*

The numbers in parentheses indicate the positions of drawings in plates and figures. Count from the top downward or from left to right when there are two or more columns of illustrations. The three books listed below are by Robert C. Stebbins.

### *Amphibians of Western North America* (University of California Press, 1951)

#### *Plates*

7 (7-9), 12 (1-7), 13 (all)

#### *Figures*

1, 2, 4, 5, 8-13, 15, 30-39

#### *Endpapers*

Salamanders (except 3 and 5), frogs, and toads

### *Reptiles and Amphibians of the San Francisco Bay Region* (University of California Press, 1959)

#### *Plates*

1 (1, 2, 4), 2 (1, 2), 6 (1-7), 10 (3), 11 (1), 14 (1-4, 7), 16 (5, 6), 26 (3-6), 28 (4-6), 29 (5, 6), 31 (1), 34 (4), 36 (2, 4-6, 9), 37 (2, 4, 6-8), 39 (1-3, 7), 43 (1-4), 44 (1)

### *Amphibians and Reptiles of Western North America* (McGraw-Hill, 1954)

#### *Plates*

7 (1-6), 17 (all), 18 (all), 19 (1, 2, 4), 20 (all), 21 (all), 25 (all), 30 (all), 40 (1-10, 13, 14), 41 (1-5, 7-9)

#### *Figures*

6, 7, 16-18, 20, 21 (1-4), 22-26, 28, 29

#### *Endpapers*

Lizards, turtles, snakes

**A Field Guide  
to Western Reptiles  
and Amphibians**



### MAP OF AREA COVERED

Range maps showing the distribution of species and subspecies within this area begin on p. 285.

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## Introduction

Many people are discovering the pleasures of observing amphibians and reptiles, and biologists are turning increasingly to these animals as subjects for scientific research. Such growing interest has greatly expanded the information available on the habits, distribution, and taxonomic relationships of our western herpetofauna since this Field Guide was first published in 1966. The present book attempts to bring things up-to-date. Allowances, however, must be made for the lag time between the author's efforts (ending in March 1984) and publication, along with some probable oversights. I have included Baja California, an area rich in reptiles, already partly covered by the previous edition, because of the growing interest of herpetologists and outdoor recreationists in that area. This new edition includes 31 species of salamanders, 44 species of frogs and toads, 16 species of turtles, 76 species of lizards, 1 mole lizard (amphisbaenid), and 76 species of snakes — a total of 244 species, 37 more than in my previous book.

The primary function of the book is identification. In this connection I have included information on methods of capture, for in contrast to birds, reptiles and amphibians must usually be in hand to be identified. Captivity should be only temporary, however, and after examination the animals should be released where they were found. An attitude of "leave it alone," watch, and study should be developed. The undisturbed animal in its natural setting can provide much valuable information. Some collecting may be necessary for scientific studies and can be arranged for by state and federal permits.

When traveling through natural terrain, stop occasionally to explore the roadsides. Armed with a lizard noose, easily improvised (see p. 12); a jar for specimens; and the information supplied in this book; you may find much of interest. The desert, a forbidding place at first, will seem more hospitable after you meet some of its inhabitants. Discovery of a Long-tailed Brush Lizard, hiding camouflaged on the branch of a creosote bush, will leave a pleasant memory. The desert will never look the same again.

**Area Covered.** This book covers western North America including Baja California, from a line formed by the eastern boundaries of New Mexico, Colorado, Wyoming, Montana, and Saskatchewan north to the Arctic Circle. The area is referred to in the text as "the West" or "our area." The remaining portion of North America is referred to as "the East."