

GEOLOGICAL SURVEY OF ALABAMA

EUGÈNE ALLEN SMITH, *State Geologist*

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A PRELIMINARY CATALOGUE OF ALABAMA AMPHIBIANS AND REPTILES

By
H. P. LÖDING



UNIVERSITY, ALABAMA

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LETTER OF TRANSMITTAL

University, Ala., June, 1922.

*To His Excellency,
Governor Thomas E. Kilby,
Montgomery, Alabama.*

Sir: I have the honor to transmit herewith the manuscript of a preliminary catalogue of the Amphibians and Reptiles of Alabama, by H. P. Loding, with the request that it be printed as Museum Paper No. 5 of the Alabama Museum of Natural History, (Geological Survey Museum.)

This catalogue has been prepared in pursuance of the policy of the Survey outlined in 1873, which contemplated the investigation not only of the geological and agricultural relations of the state, but of the fauna and flora also, since these have a most direct and important bearing on agriculture.

The author is a florist in Mobile, who has been for many years an enthusiastic student and collector of reptiles and other animal forms, including especially insects. He has prepared this report without cost to the Survey, for which our sincere thanks are due and herewith tendered.

In the closing chapter of this report "On the Collection and Preservation of Reptiles and Amphibians for Scientific and Museum Purposes", Mr. Loding points out the fact that these animals, so far from being a menace to the human family, are of equal importance with birds in the task of keeping destructive insects and rodents within bounds. If the present paper should help to educate our young people to an understanding of the economic value of these generally despised and hated forms, its publication will be amply justified.

Very respectfully,

EUGENE A. SMITH,
State Geologist.

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Observations are made every day by these observers of the gage readings at the several stations. From these records when extended through sufficient time, the calculation of available horse power to be obtained from the different streams is made.

TABLE OF CONTENTS

Introduction	7-8
Systematic list	9-47
Class Amphibia	9-21
Order Caudata, or Urodela (tailed amphibians)	9-15
Suborder Proteida	9
Family Necturidae (mud-puppies, etc.)	9
Suborder Mutabilia (newts, salamanders, etc.)	9-15
Family Amphiumidae	9-10
Family Cryptobranchidae	10
Family Salamandridae	10
Family Ambystomidae	11-12
Family Plethodontidae	12-15
Suborder Meantes	15
Family Sirenidae (mud-eels)	15
Order Salientia (frogs, toads, etc.)	16-21
Suborder Lingusta, or Arcifera	16-21
Family Scaphiopodidae	16
Family Bufonidae (toads)	16-17
Family Hylidae (tree-frogs)	17-19
Family Ranidae (bull-frogs)	19-21
Family Brevicipitidae	21
Class Reptilia	22-47
Subclass Diapsida	22
Order Loricata	22
Family Crocodylidae (crocodiles and alligators)	22
Subclass Parapsida	23-40
Order Squamata	23-40
Suborder Sauria, or Lacertilia	23-25
Family Iguanidae (chameleons, horned toads, etc.)	23
Family Anguidae (glass-snakes, etc.)	24
Family Teiidae (lizards)	24
Family Scincidae (lizards)	24-25
Suborder Serpentes, or Ophidia (snakes)	26-40
Family Colubridae	26-38
Family Elapidae	38-39
Family Crotalidae (poisonous snakes)	39-40
Subclass Anapsida, or Chelonia	41-47
Order Testudinata (turtles, tortoises, terrapins)	41-47
Family Kinosternidae (musk or mud turtles)	41
Family Chelydridae (snapping turtles, etc.)	42-46
Family Cheloniidae (sea turtles)	46-47
Family Trionychidae (soft-shelled turtles)	47
Summary of Alabama species	48
Directions for collecting and preserving specimens	49-52
Important literature	52-53
Index	55-59

A PRELIMINARY CATALOGUE OF ALABAMA AMPHIBIANS AND REPTILES

BY H. P. LÖDING

INTRODUCTION.

IN SUBMITTING for publication the following report on Amphibians and Reptiles found within the limits of the State, a few words of acknowledgement and explanation are necessary.

At the suggestion of Dr. Eugene A. Smith, State Geologist, it was originally agreed, that Mr. Julius Hurter, of St. Louis, Missouri, in conjunction with the writer, were to furnish material for a descriptive catalogue of Alabama amphibians and reptiles to be published by the Geological Survey of Alabama.

The death of Mr. Hurter in December, 1916, and the incomplete exploration of the State as a whole, have prevented the realization of this plan, at least for some time to come, and, in the meantime, it was deemed advisable to publish the data and records at hand, so as to stimulate and facilitate further studies and collections in the State, also in the hope, that the present list, however incomplete, may be of some use in throwing additional light upon the distribution of the species within the United States.

The list as here published is based upon collections made for a number of years in Mobile and Baldwin counties and on a short trip to northeast Alabama in June, 1911, by Mr. T. S. van Aller and the writer; upon specimens represented in the Alabama Museum of Natural History at the University of Alabama, the majority of which were collected by Mr. Herbert H. Smith and identified by Mr. Hurter during a visit to Alabama in the summer of 1915, or by Dr. Frank N. Blanchard and Mr. E. R. Dunn; and upon specimens in the Museum of Archives and History in Montgomery, Alabama, which were submitted for study through the courtesy of Dr. Thomas M. Owen, Director.

In the compilation of this list, the author is greatly indebted to the following for help and favors freely given:

To my dear departed friend, Mr. Julius Hurter of St. Louis, Missouri; Dr. Frank N. Blanchard of the University of Michigan; Mr. E. R. Dunn, Museum of Comparative Zoology, Harvard University; Dr. Eugene A. Smith of the University of Alabama; Mr. Herbert H. Smith, late Curator of the Alabama Museum of Natural History, University, Alabama; Mrs. H. H. Smith, acting curator of the museum; Dr. Thomas M. Owen, late Director of the State Department of Archives and History, and last but not least, to my best friend and companion, on all collecting trips for many years, Mr. Thomas S. van Aller of Mobile.

The interest taken by the following gentlemen in collecting and donating specimens also deserves being put on record: the late Mr. L. H. McNeill, Mr. W. C. Dukes, Dr. Toulmin Gaines, Mr. Thomas McMickle, Dr. Robert Peters, Mr. J. A. Joulilian, all members or former members of the Charles Mohr Society of Natural History of Mobile. Mr. W. R. Jones of Satsuma; Messrs. P. A. Brannon, Adolph Dreyspring, Mac. Billings and Reese Martin of Montgomery, Mr. Lucien Lewis of Seale, and Charles Lenoir Thompson, of Perdido.

In nomenclature and classification Stejneger and Barbour's check-list is followed pretty closely, but in cases where different technical names have been used in more accessible works, such as those of Cope and Dittmars, * such names are added in parentheses to facilitate identification.

Besides the species which have been actually collected in Alabama by the author or others a few additional ones are included which from what is known of their distribution may be reasonably expected in this state, to stimulate interested persons to be on the lookout for them. Our present knowledge of their distribution is indicated in each case. Information about species not listed, Alabama localities for those listed as probable, new localities for species already known in the state, and corrections of any kind, will be welcomed, and may be communicated either to the author, at the Gem Floral Garden, Mobile, or to the State Geologist, at University.

*For more exact citations see appendix.

SYSTEMATIC LIST.

FAMILY: NECTURIDAE

GENUS: NECTURUS, Rafinesque.

NECTURUS MACULOSUS Rafinesque (*N. maculatus* Cope)

WATERDOG, MUDPUPPY

Type locality: Ohio River.

General Distribution: Eastern United States, mostly in the Mississippi valley and northeastward.

Alabama records: Colbert, Tuscaloosa and Montgomery counties; Warrior River.

NECTURUS PUNCTATUS (Gibbes) Cope

MUDPUPPY

Type locality: Near mouth of Santee River, South Carolina.

General distribution: Fresh waters of North and South Carolina, and Alabama.

Alabama records: Eslava's Creek, Mobile County; six specimens collected by my son, Christian Loding.

FAMILY: AMPHIUMIDAE

GENUS: AMPHIUMA, Garden.

AMPHIUMA MEANS Garden

CONGO-SNAKE, CONGER-EEL, LAMPEREEL

Type locality: Not given, but probably South Carolina or East Florida.

General distribution: Virginia south to Florida west to Louisiana.

Alabama records: Mobile and Geneva Counties; in ditches and swamps.

In view of the bad reputation of this animal, which is commonly believed to cause death by its bite, it may be well to state, that the *Amphiuma* is non-poisonous and from my experience in handling many specimens I should say entirely harmless.

AMPHIUMA TRIDACTYLUM Cuvier

THREE-TOED CONGO-SNAKE

Type locality: New Orleans, Louisiana.

General distribution: Northern Florida to Louisiana, up the Mississippi Valley to Missouri.

Alabama records: Greensboro, Hale County.

FAMILY: CRYPTOBRANCHIDAE

GENUS: CRYPTOBRANCHUS, Leuckart.

CRYPTOBRANCHUS ALLEGANIENSIS (Daudin) Cope

HELL-BENDER

Type locality: Allegheny Mountains, Virginia.

General distribution: Western New York, the Great Lakes system, Iowa and southward to Georgia and Louisiana.

Alabama records: None.

FAMILY: SALAMANDRIDAE, (Pleurodelidae)

GENUS: NOTOPHTHALMUS, Rafinesque.

NOTOPHTHALMUS MERIDIONALIS (Cope)

Stejneger & Barbour

(Diemyctylus viridescens meridionalis Cope)

Type locality: Mexico.

General distribution: Southern Georgia to Louisiana, Texas and Mexico.

Alabama records: None.

NOTOPHTHALMUS VIRIDESCENS VIRIDESCENS

(Rafinesque)

(Diemyctylus viridescens Cope)

COMMON NEWT (aquatic form), RED EFT (terrestrial form)

Type locality: Lake George, Lake Champlain.

General distribution: Eastern North America.

Alabama records: Mobile and Lawrence Counties; common under logs in winter (terrestrial form) and in ponds in summer (aquatic form).

FAMILY: AMBYSTOMIDAE

GENUS: AMBYSTOMA, Tschudi. (Also spelled Amblystoma.*)

AMBYSTOMA CINGULATUM Cope (*Chondrotus cingulatus*
Cope)

Type locality: Grahamville, South Carolina.

General distribution: South Carolina to Northern
Florida and Alabama.Alabama records: Monte Sano, Madison County,
Dog River, Mobile County; Magnolia Springs, Baldwin
County (H. H. Smith).AMBYSTOMA MACULATUM (Shaw) Stejneger
(*A. punctatum* Cope)

SPOTTED SALAMANDER

Type locality: Carolina.

General distribution: Nova Scotia to Wisconsin,
Georgia and Texas.Alabama records: University, Tuscaloosa County;
one specimen, March 15, 1913.AMBYSTOMA OPACUM (Gravenhorst)
MARbled SALAMANDER, OPAQUE SALAMANDER

Type locality: New York.

General distribution: Eastern United States.

Alabama records: Monte Sano, Madison County;
Moulton, Lawrence County; Tuscaloosa County; We-
tumpka, Elmore County; Sumter County; Salco, Mobile
County; lives under logs and rocks.The Salco specimens seem to be uniformly smaller and
the markings are more pronounced, than the specimens I
have taken in the northern part of the State.AMBYSTOMA TALPOIDEUM (Holbrook) Gray
MOLE SALAMANDERType locality: Sea islands on the border of South
Carolina.

*See Science II, 43:929-930; 44:309-311, 1916.

General distribution: South Atlantic and Gulf States, Louisiana to Illinois.

Alabama records: None.

AMBYSTOMA TIGRINUM (Green) Baird
TIGER SALAMANDER

Type locality: Near Moorestown, New Jersey.

General distribution: United States west to Rocky Mountains and south to Northern Mexico.

Alabama records: Bibb and Montgomery Counties; City of Mobile, several specimens.

FAMILY: PLETHODONTIDAE

GENUS: HEMIDACTYLUM, Tschudi.

HEMIDACTYLUM SCUTATUM (Schlegel) Tschudi
FOUR-TOED SALAMANDER

Type locality: Nashville, Tennessee.

General distribution: Southern Canada and Eastern United States.

Alabama records: Duncanville, Tuscaloosa County.

GENUS: PLETHODON, Tschudi.

PLETHODON AENEUS Cope (Am. Nat. 15:878, 1881)

Type locality: Nickajack Cave, (about 1-2 mile north of the northeastern corner of Alabama.)

General distribution: Mountains of Virginia to Georgia. This may be reasonably expected in some of the caves of northeastern Alabama.

PLETHODON DORSALIS (Cope) Stejneger & Barbour
(*P. cinereus dorsalis* Cope)

Type locality: Salem, Massachusetts (?) and Louisville, Kentucky.

General distribution: Southern Illinois, southern Ohio, southern Indiana, western Kentucky, and Alabama.

Alabama records: Gallant, St. Clair County, and University, Tuscaloosa County.

PLETHODON GLUTINOSUS (Green) Tschudi
SLIMY SALAMANDER, WATER LIZARD

Type locality: Not given, but without doubt Princeton, New Jersey.

General distribution: Eastern United States.

Alabama records: DeKalb, Lawrence, St. Clair, Tuscaloosa, Macon, Montgomery, Barbour, Marengo, Dale, Mobile and Baldwin counties.

GENUS: GYRINOPHILUS, Cope.

GYRINOPHILUS PORPHYRITICUS (Green) Cope

Type locality: French Creek, near Meadville, Crawford County, Pennsylvania.

General distribution: Southern Canada, south through the eastern states to Kentucky, Ohio and Tennessee.

Alabama records: None, but has been found on Look-out Mountain, Tennessee.

GENUS: MANCULUS, Cope.

MANCULUS QUADRIDIGITATUS (Holbrook) Cope
DWARF SALAMANDER

Type locality: South Carolina, Georgia and Florida.

General distribution: North Carolina to Florida and Texas.

Alabama records: Mobile and Baldwin Counties.

GENUS: EURYCEA, Rafinesque.

EURYCEA BISLINEATA CIRRIGERA Green

Type locality: New Orleans, Louisiana.

General distribution: Southern Georgia, northern Florida, Alabama, southern Mississippi, and southeastern Louisiana (E. R. Dunn).

Alabama records: Mobile; Baldwin, Tuscaloosa; Bibb; St. Clair; Calhoun; Chilton; Barbour and Dale Counties.

EURYCEA GUTTO-LINEATA (Holbrook) Stejneger & Barbour
(*Spelerpes guttolineatus*, Cope)
HOLBROOK'S SALAMANDER

Type locality: "Carolina in the middle country."

General distribution: Virginia to Georgia and west to Louisiana.

Alabama records: Madison; Tuscaloosa; Greene; Mobile and Baldwin Counties.

EURYCEA LONGICAUDA (Green) Stejneger & Barbour
(*Spelerpes longicaudus* Cope)
LONG-TAILED SALAMANDER

Type locality: New Jersey (probably near Princeton).

General distribution: Southern New England to Florida and Louisiana, west to Illinois and Missouri.

Alabama records: Monte Sano, Madison County.

EURYCEA LUCIFUGA Rafinesque
(*Gyrinophilus maculicaudus* Cope)

Type locality: Caves near Lexington, Kentucky.

General distribution: West Virginia to Tennessee, also Indiana, Illinois and Missouri.

Alabama records: According to E. R. Dunn there is a larva of this species in the Museum of Comparative Zoology (No. 225) with no other locality label than Alabama, and specimens have been taken just over the line in Marion county, Tennessee.

EURYCEA MONTANA FLAVISSIMA (Hallowell)

Type locality: Liberty County, Georgia.

General distribution: Southern Georgia, northern Florida, southern Alabama, southern Mississippi, and southeastern Louisiana (E. R. Dunn).

Alabama records: Auburn, Lee County, and Mobile.

EURYCEA RUBRA RUBRA (Sonnini) (*Spelerpes ruber*, Cope)
RED SALAMANDER

Type locality: United States.

General distribution: Eastern United States.

Alabama records: Madison, Etowah, and St. Clair Counties; Anniston, Calhoun County; Tuscaloosa.

GENUS: DESMOGNATHUS, Baird.

DESMOGNATHUS FUSCUS FUSCUS (Rafinesque)

Type locality: Northern parts of New York State.

General distribution: Southern Canada to mountains of Carolinas, Georgia and Alabama.

Alabama records: Lauderdale; Calhoun; Tuscaloosa; Lee; Greene and Marengo Counties.

DESMOGNATHUS FUSCUS AURICULATUS (Holbrook)
EARED SALAMANDER

Type locality: Riceborough, Georgia.

General distribution: Lowlands from Virginia to Florida and Gulf States.

Alabama records: Lauderdale; Madison; Tuscaloosa; Bibb; Mobile and Baldwin Counties.

FAMILY: SIRENIDAE

GENUS: SIREN, Linne.

SIREN LACERTINA Linne

TWO-LEGGED EEL, MUD-EEL

Type locality: "Habitat in Carolinae paludosis."

General distribution: Eastern Virginia to Florida., Gulf States to the west side of Rio Grande, Mississippi Valley to Illinois and Indiana. Occurs also in Arkansas and Missouri.

Alabama records: Spring Hill Reservoir, Mobile County.

FAMILY: SCAPHIOPODIDAE

GENUS: SCAPHIOPUS, Holbrook.

SCAPHIOPUS HOLBROOKII HOLBROOKII (Harlan)
HERMIT SPADEFOOT

Type locality: South Carolina.

General distribution: Eastern States, Massachusetts to Florida, west to Texas and Arkansas.

Alabama records: Mobile County.

This species has only been taken rarely and always singly, until in the late fall of 1918, when I caught six specimens in and about the boiler pit of my greenhouses.

FAMILY: BUFONIDAE

GENUS: BUFO, Laurenti.

BUFO AMERICANUS Holbrook
(*B. lentiginosus americanus*, Cope)
AMERICAN TOAD

Type locality: "From Maine through all the Atlantic States."

General distribution: Eastern North America from Hudson Bay southward.

Alabama records: I have no definite records or identifications of this toad for the State.

BUFO FOWLERI Garman (*B. lentiginosus fowleri*, Cope)
FOWLER'S TOAD

Type locality: "Manitoba to Winnipeg; Massachusetts."

General distribution: New England and New York, southward to Georgia, west to Michigan.

Alabama records: Calhoun, Tuscaloosa, and Mobile counties.

BUFO QUERCICUS Holbrook
OAK TOAD

Type locality: Charleston, South Carolina and Smithville (now Southport), North Carolina.

General distribution: North Carolina to Florida and Alabama.

In Mobile County this little toad is rather common in high sandy locations with Scrub Oak and Palmetto undergrowth.

Alabama records: Mobile and Baldwin Counties.

BUFO TERRESTRIS Bonnaterre (*B. lentiginosus* Shaw)
SOUTHERN TOAD

Type locality: "La Caroline."

General distribution: Carolinas to Florida and west to Mississippi.

Alabama records: Montgomery, Mobile, and Baldwin Counties, probably over the State.

FAMILY: HYLIIDAE

GENUS:: ACRIS, Dumeril and Bibron.

ACRIS GRILLUS (LeConte) Dum. & Bibr.
CRICKET-FROG

Type locality: Not given.

General distribution: Eastern half of the United States and northward.

Alabama records: Marengo County (Cope); Mobile County.

GENUS: PSEUDACRIS, Fitzinger.

PSEUDACRIS NIGRITA (LeConte) Gunther
(*Chorophilus nigratus* Cope)
SWAMP TREE FROG

Type locality: Not given.

General distribution: South Carolina to Mississippi.

Alabama records: Mobile County.

PSEUDACRIS OCCIDENTALIS (Baird and Girard) Stejneger
and Barbour
(*Chorophilus occidentalis* Cope)

Type locality: Unknown.

General distribution: Georgia and Florida, west to Arkansas and Texas.

Alabama records: Mobile County.

PSEUDACRIS ORNATA (Holbrook) Stejneger & Barbour
(*Chorophilus ornatus* Cope)

Type locality: Charleston, South Carolina.

General distribution: South Carolina to Florida, west to Texas.

Alabama records: None.

GENUS: HYLA, Laurenti.

HYLA CINEREA (Schneider) Garman, (*H. carolinensis*, Cope)

Type locality: "Inhabits Carolina."

General distribution: Virginia to Florida, west to Texas and northward up the Mississippi Valley to Southern Illinois.

Alabama records: Tuscaloosa, Montgomery, Mobile and Baldwin Counties.

HYLA CRUCIFER Wied (*H. pickeringii* (Holbrook) Cope)
SPRING-PEEPER, PICKERING'S FROG

Type locality: Kansas.

General distribution: New Brunswick to Manitoba, south to South Carolina, Louisiana, Arkansas and Kansas.

Alabama records: Mobile County.

HYLA FEMORALIS Latreille
PINE-WOOD TREE FROG

Type locality: Carolina.

General distribution: Carolina to Florida and west to Texas.

Alabama records: Tuscaloosa; Mobile; and Baldwin counties. Common in the last two counties, and probably over the State.

HYLA GRATIOSA LeConte
FLORIDA TREE-FROG

Type locality: Lower country of Georgia.

General distribution: South Carolina to Florida and Mississippi.

Alabama records: University, Tuscaloosa County; Kelly's Pond, Mobile County.

This, the largest of our tree-frogs seemed to be very rare previous to the hurricane of July, 1916, up to which time in all our collecting only two adults and two very young specimens had been taken; but suddenly during August of that year the species became very common, in fact could be seen by the thousands in the Satsuma orange orchards through Mobile County. Since then it has gradually become scarcer and at present is not seen very often.

HYLA SQUIRELLA Latreille
SOUTHERN TREE-FROG

Type locality: Carolina.

General distribution: Virginia to Florida, west to Texas and up the Mississippi to Indiana.

Alabama records: Mobile county.

HYLA VERSICOLOR VERSICOLOR (LeConte)
CHAMELEON TREE-FROG, RAIN TOAD

Type locality: "Northern States."

General distribution: From Southern Canada west to Minnesota and South to the Gulf States.

Alabama records: Tuscaloosa, Greene (Cope), and Mobile Counties. Our most common Tree-Frog.

FAMILY: RANIDAE

GENUS: RANA, Linne.

RANA AREOLATA Baird and Girard

Type locality: Indianola, Texas.

General distribution: From Florida to Texas and up the Mississippi to Missouri, Indiana and Illinois.

Alabama records: Dog River, Mobile County, August 10, 1919.

RANA CATESBEIANA Shaw
COMMON BULLFROG

Type locality: North America.

General distribution: United States, east of the Rocky Mountains.

Alabama records: Tuscaloosa and Mobile Counties, but probably found all over the State.

RANA CLAMITANS Latreille (*R. clamata* Cope)
GREEN FROG, SPRING FROG

Type locality: Charleston, South Carolina.

General distribution: Eastern North America.

Alabama records: Tuscaloosa, Greene (Cope), Montgomery, Mobile and Baldwin counties.

RANA GRYLIO Stejneger
SOUTHERN BULLFROG

Type locality: Bay St. Louis, Mississippi.

General distribution: Southern Mississippi to peninsular Florida.

Alabama records: None; however, the distinctive note of this frog has been heard by the writer and others in Mobile County.

RANA PALUSTRIS LeConte
PICKEREL FROG

Type locality: Not given.

General distribution: Hudson Bay south to Arkansas and Louisiana and all of the eastern states.

Alabama records: None.

RANA SPHENOCEPHALA (Cope) Stejneger & Barbour
(*R. virescens sphenocephala*, Cope)
SOUTHERN LEOPARD FROG

Type locality: Near St. John's River, Florida.

General distribution: Southeastern United States.

Alabama records: Tuscaloosa, Montgomery and Mobile Counties.

FAMILY: BREVICIPITIDAE

GENUS: GASTROPHRYNE, Fitzinger.

GASTROPHRYNE CAROLINENSIS (Holbrook) Stejneger and
Barbour

(*Engystoma carolinense* Holbrook)

NARROW-MOUTHED TOAD

Type locality: Charleston, South Carolina.

General distribution: Virginia to Florida and Texas,
northward through the central valley to southern Indiana.

Alabama records: Cherokee, Etowah, Calhoun, St. Clair, Tuscaloosa, Mobile and Baldwin Counties.

FAMILY: CROCODYLIDAE

GENUS: CROCODYLUS, Laurenti (Crocodinus).

CROCODYLUS ACUTUS Cuvier ("*C. americanus*")

Type locality: San Domingo.

General distribution: Southern Florida and tropical America.

Alabama records: A young specimen about three feet long was caught after a cloudburst in the outskirts of Mobile; as in similar cases it was said to have come down with the rain. Mr. T. S. van Aller purchased the specimen and later on presented it to the Alabama Museum of Natural History. Diligent search and examination of numerous alligators in the hope of finding other specimens so as to establish the species as indigenous to the State have thus far been in vain.

GENUS: ALLIGATOR, Cuvier.

ALLIGATOR MISSISSIPPIENSIS (Daudin) Gray

Type locality: "Les bordes du Mississippi."

General distribution: Rivers and swamps of the coastal plain from North Carolina to Florida, Oklahoma, and Texas.

Alabama records: Mobile and Baldwin Counties; not uncommon up rivers to Selma and Eutaw or thereabouts.*

Mr. Julius Hurter and the writer on a collecting trip to Baldwin County witnessed a captive alligator struggling for its liberty expel three large specimens of a water snake, *Natrix rhombifera*.

*On a trip by house-boat from Tuscaloosa to Jackson in October, 1908, a small dead alligator was seen in the river, about 50 miles below Tuscaloosa, but no live ones on the whole trip. The bridge tender at Epes on the Tombigbee when interrogated recently said he knew of no alligators in the river there. A small specimen was found in the Warrior River near Tuscaloosa July 23, 1922, but it may possibly have escaped from captivity. The distribution of this species seems to be much like that of the Spanish moss. (*Tillandsia usneoides*). R. M. HARPER.

FAMILY: IGUANIDAE

GENUS: ANOLIS, Daudin.

ANOLIS CAROLINENSIS Voigt
AMERICAN CHAMELEON

Type locality: Carolina.

General distribution: North Carolina to Florida and westward through the Gulf region to the Rio Grande.

Alabama records: DeKalb, Talladega, Tuscaloosa, Bibb; Greene; Sumter; Dale and Mobile counties.

The value of this beautiful little lizard as an insect destroyer has been observed for many years in my green houses, where they breed by the hundreds and the eggs may be found abundantly in fern pots.

GENUS: SCELOPORUS, Wiegmann.

SCELOPORUS SPINOSUS FLORIDANUS (Baird) Stejneger
SPINY SWIFT, FLORIDA SWIFT

Type locality: Pensacola, Florida.

General distribution: New Mexico to western Florida.

Alabama records: Elamville, Barbour County; Mobile and Baldwin counties.

SCELOPORUS UNDULATUS (Latreille) Wiegmann

FENCE LIZARD, COMMON SWIFT, ALLIGATOR LIZARD

Type locality: "Les grands bois de la Caroline."

General distribution: New Jersey to Florida and Alabama.

Alabama records: Tuscaloosa, Greene, Montgomery, Mobile and Baldwin counties, most likely over the State.

Horned Toads (genus *Phrynosoma*) are occasionally found in our cities, but doubtless escaped from captivity, for they are not known to occur naturally east of Missouri.

FAMILY: ANGUIDAE

GENUS: OPHISAURUS, Daudin.

OPHISAURUS VENTRALIS (Linne) Daudin

GLASS SNAKE, JOINT SNAKE

Type locality: Carolina.

General distribution: North Carolina to Florida in the East, Nebraska, Wisconsin and Illinois south into Mexico.

Alabama records: St. Clair, Tuscaloosa, Mobile, and Baldwin counties.* Very common in and around Mobile.

FAMILY: TEIIDAE

GENUS: CNEMIDOPHORUS, Wagler.

CNEMIDOPHORUS SEXLINEATUS (Linne). Dum. & Bibr.

SIX-LINED LIZARD, RACE-RUNNER

Type locality: Carolina.

General distribution: Maryland to Florida, west to northern Mexico and Arizona and up the Mississippi Valley to Lake Michigan.

Alabama records: Tuscaloosa, Greene, Montgomery, Baldwin and Mobile counties.

FAMILY: SCINCIDAE

GENUS: LEIOLOPISMA, Dumeril and Bibron.

LEIOLOPISMA LATERALE (Say) Jordan (*Lygosoma laterale*)

GROUND LIZARD

Type locality: Banks of Mississippi River below Cape Girardeau, Missouri.

General distribution: Maryland to Florida, west to Illinois and Texas.

Alabama records: Mobile, Baldwin and Etowah counties.

*I saw one in a road in Walker County in October, 1911. R. M. Harper.

GENUS: PLESTIODON, Dumeril and Bibron.

PLESTIODON FASCIATUS (Linne) Baird

(*Eumeces quinquelineatus* Bocourt)

SCORPION, BLUE-TAILED SKINK, FIVE-LINED LIZARD, RED-HEADED
LIZARD

Type locality: Carolina.

General distribution: Southern New England to Florida, up the Mississippi Valley to Canada, westward to Arizona.

Alabama records: Calhoun, Tuscaloosa, Bibb, Greene, Sumter, Montgomery, Choctaw, Mobile and Baldwin counties.

PLESTIODON PLUVIALIS (Cope)

Type locality: Mobile, Alabama.

General distribution: "Central Gulf Area." (Stejneger and Barbour.)

Alabama records: We only know of the type specimen, which, according to Cope, was taken near Mobile, Alabama, by Dr. Joseph Corson, U. S. A., and deposited in the Cope Collection, Academy of Natural Sciences of Philadelphia.

Intensive collecting and examination of hundreds of specimens, all evidently belonging to the previous species, by Mr. van Aller and the writer in Mobile and Baldwin Counties has failed to turn up another record.

FAMILY: COLUBRIDAE

GENUS: CARPHOPHIS, Gervais.

CARPHOPHIS AMOENUS (Say) Gervais
(*Carphophiops amoenus* Cope)
WORM SNAKE

Type locality: Pennsylvania.

General distribution: Connecticut to Florida, westward to Ohio, Illinois and Indiana.

Alabama records: Madison, Blount, DeKalb, Etowah, St. Clair, Tuscaloosa and Sumter (E. T. Norman) counties.

This snake was found plentiful under rocks in the mountainous counties, by Mr. van Aller and myself; it does not seem to be found in the coast counties.

GENUS: ABASTOR, Gray.

ABASTOR ERYTHROGRAMMUS (Daudin) Gray
RAINBOW SNAKE

Type locality: "Etats Unis d'Amerique."

General distribution: Virginia southward to Florida and Alabama.

Alabama records: Walker Count (H. H. Smith); Tuscaloosa County; Crichton, Mobile County; Balwin County.

GENUS: FARANCIA, Holbrook.

FARANCIA ABACURA (Holbrook) Cope
HORN SNAKE, HOOP SNAKE, MUD SNAKE

Type locality: South Carolina.

General distribution: Virginia to Florida and Louisiana, northward in the Mississippi Valley to Indiana.

Alabama records: Many specimens from various parts of Mobile County and Tuscaloosa County.

From the number of mutilated specimens seen, this snake must evidently be very common on the coast. The common belief that it is dangerous and can inflict deadly wounds with the awl-like tip of its tail, is, needless to say, without any foundation of fact, and the same may be said of the previous species.

GENUS: DIADOPHIS, Baird and Girard.

DIADOPHIS PUNCTATUS (Linne) Baird & Girard
RING-NECKED SNAKE

Type locality: Carolina.

General distribution: Eastern United States.

Alabama records: Lawrence, Tuscaloosa, Mobile, and Baldwin counties; under logs and sphagnum moss in moist places.

GENUS: HETERODON, Latreille.

HETERODON CONTORTRIX (Linne) Stejneger & Barbour
(Formerly called *H. platyrhinus*)
SPREADING ADDER, BLOWING ADDER, HOG-NOSED SNAKE

Type locality: Carolina.

General distribution: Eastern United States.

Alabama records: Tuscaloosa, Hale, Greene, Sumter, Montgomery, Clarke, Mobile and Baldwin counties.

The Spreading Adder has an undeserved bad reputation; it is absolutely harmless and may be handled with impunity without fear of even a bite.

The black form of this snake passing under the specific or varietal name of *niger* is found in Mobile and Tuscaloosa counties with the typical form.

HETERODON SIMUS (Linne) Holbrook
HOG-NOSED SNAKE, SPREADING ADDER

Type locality: Carolina.

General distribution: Southeastern States, Indiana to Florida.

Alabama records: Perdido, Baldwin County (Lenoir Thompson).

GENUS: LIOPELTIS, Fitzinger.

LIOPELTIS VERNALIS (Harlan) Cope
SMOOTH GREENSNAKE

Type locality: Pennsylvania and New Jersey.

General distribution: Canada to Florida and New Mexico, commonest northeastward.

Alabama records: None.

GENUS: OPHEODRYS, Fitzinger.

OPHEODRYS AESTIVUS (Linne) Cope
(*Cyclophis aestivus* Cope)
ROUGH GREENSNAKE

Type locality: Carolina.

General distribution: New Jersey to Florida, west to New Mexico and northward to Kansas and Illinois.

Alabama records: Etowah, Jefferson, Tuscaloosa, Montgomery, and Mobile counties.

Usually found climbing in trees and hedges.

GENUS: COLUBER, Linne.

COLUBER CONSTRICTOR CONSTRICTOR (Linne)
(*Zamenis constrictor* Boulenger, *Bascanium constrictor* Baird and Girard)
BLACK SNAKE, BLACK RACER

Type locality: North America.

General distribution: Eastern United States westward to Texas and the Great Plains.

Alabama records: St. Clair, Shelby, Tuscaloosa, Sumpter, Mobile and Baldwin counties. Probably common throughout the State.

COLUBER FLAGELLUM FLAGELLUM (Shaw)
(*Zamenis flagellum* Cope; *Bascanium flagelliforme* Cope)

COACH WHIP, WHIP SNAKE

Type locality: Virginia and Carolina.

General distribution: Virginia to Florida, west to the Rocky Mountains.

Alabama records: Tuscaloosa, Sumter, Barbour and Mobile counties. Not uncommon in dry fields and cut over pine lands in Mobile county.*

This species and the preceding are probably the most useful snakes in the State, on account of their food habit, which consists largely of rats and mice, and their general common occurrence within its borders.

*I have seen this snake in pine forests on and near the mountains in Cleburne and Clay Counties, and on May 28, 1921, I saw one swimming across the Locust Fork of the Warrior River near the mouth of Village Creek, Jefferson County. R. M. Harper.

GENUS: ELAPHE, Fitzinger.

ELAPHE GUTTATA (Linne) (*Coluber guttatus* Linne)

CORN-SNAKE, CHICKEN SNAKE, SCARLET RACER

Type locality: Carolina.

General distribution: Maryland to Florida and Louisiana.

Alabama records: St. Clair, Tuscaloosa, Mobile and Baldwin counties.

A beautiful and useful snake commonly found under bark of dead pine trees in early spring.

ELAPHE OBSOLETA OBSOLETA (Say) *Coluber obsoletus obsoletus* (Cope)

PILOT-SNAKE, BLACKSNAKE

Type locality: "Isle au Vache to Council Bluffs on the Missouri river.

General distribution: New England westward to Michigan, southward to Florida and Texas.

Alabama records: None. The record of Cope (Rep. U. S. Nat. Mus. 1889, p. 846) based upon catalogue No. 5502, Sprout River, Alabama, proves upon examination by Dr. Stejneger to be a mistake and should read: Sprout River or Spout River, Arkansas.

ELAPHE OBSOLETA CONFINIS (Baird and Girard)

Stejneger & Barbour (*Coluber confinis* Cope)

GRAY RAT-SNAKE, SPOTTED CHICKEN-SNAKE

Type locality: Anderson, South Carolina.

General distribution: South Atlantic and Gulf States.

Alabama records: Cherokee, St. Clair, Tuscaloosa, Bibb, Montgomery and Mobile counties.

A specimen recently examined by the writer measured six feet and three inches.

ELAPHE QUADRIVITTATA (Holbrook) Dum. & Bibr.

(*Coluber quadrivittatus* Holbrook)

YELLOW CHICKEN-SNAKE, YELLOW RAT-SNAKE

Type locality: North Carolina to Florida and west to the Mississippi River.

General distribution: Same as given for type locality.
Alabama records: None.

GENUS: DRYMARCHON, Fitzinger.

DRYMARCHON CORAIS COUPERI (Holbrook) Strecker
(*Spilotes* or *Compsosoma*, Cope)
INDIGO-SNAKE, GOPHER-SNAKE

Type locality: Dry pine hills south of the Altamaha, Georgia.

General distribution: Carolinas to Florida and westward to Texas.

Alabama records: Satsuma, Mobile County.

The writer has seen several specimens on the sandy palmetto covered hills at Grand Bay, Mobile County, but has never been able to capture a specimen.

GENUS: PITUCPHIS, Holbrook. (Also spelled *Pityophis*.)

PITUOPHIS MELANOLEUCUS (Daudin) Holbrook
(black form)

BLACK BULL-SNAKE, PINE-SNAKE

Type locality of species: South Carolina and Florida.

Type locality of black form: Southwestern part of Mobile County.

General distribution: Pine barrens of southern New Jersey to Florida and Alabama

Alabama records: Abott's Station, Grand Bay, and Irvington, Mobile County.

A harmless, docile and very useful species.

In this connection the following note and description by Dr. F. N. Blanchard in *Copeia* (No. 81, New York, April, 1920), are of importance.

A BLACK PITUOPHIS

My friend, Mr. H. P. Loding, of Mobile, Alabama, recently sent me for examination a large *Pituophis*, remarkable for being uniformly black above and below, except for a little rusty color on the anterior part of the head and flecks of rust on the ends of some of the ventral scales.

This is apparently the first example of its genus to be reported from Alabama, and, so far as I know, there are no records for Georgia, Mississippi, and Louisiana. This specimen was found dead on the Hall's Mill Road, in the vicinity of high sandy hills

near Hall's Mill Creek, about 14 miles southwest of Mobile. A second specimen, which Mr. Loding informs me is like this one, was taken alive at Grand Bay, 26 miles southwest of Mobile by Dr. E. D. King, Jr. The latter, a female, was kept in confinement for over a week, but refused to eat, so was preserved and deposited in the Charles Mohr Museum in Mobile.

As Mr. Loding and his friends have been collecting reptiles in the vicinity of Mobile for several years, it would seem as if the ordinary patterned form of *Pituophis* would have been found if it occurred at all commonly in Mobile County. On the other hand the black form was not found until this past season. Possibly, however, it had been confused in the field with some of the more common large black snakes, as *Drymarchon corais couperi* and *Coluber constrictor constrictor*.

The finding of the two black specimens of *Pituophis* so far apart as twelve miles, and the absence of records for normally colored individuals, suggest the exclusive occurrence in this region of a black phase of the Bull Snake.

That all the North American bull snakes are very closely related can hardly be doubted. In fact, it appears that only color pattern can be relied upon to distinguish them with certainty. We would expect therefore to find each species of *Pituophis* directly related to the one inhabiting the adjacent range. We would not then look for a black form occupying a range between the ranges of the two closely allied pattern forms. In the United States National Museum there are two examples of *Pituophis* (No. 10363) from Murphy (near Knoxville), Tennessee, patterned like the eastern species, *P. melanoleucus*. Our black phase could therefore not extend further north than this point, and it is very likely that it will prove to be restricted to the extreme south where it is now found. If the Gulf Coast may be regarded as in general unfavorable to the bull snakes, we may readily understand how a local color phase may have become established in a limited region of favorable habitat.

As there are no other specimens of *Pituophis* on record from this southern tier of states, and since it is chiefly on color characters that the nearest species, *P. Sayi* and *P. melanoleucus* are distinguished, it is rather difficult to assign this black form definitely to either one. The two specimens from Murphy, Tennessee are undoubtedly *P. melanoleucus*. This is perhaps the most western definite record for the eastern species. How much further west it may extend can only be conjectured. Eastern records for *P. sayi* seem to be limited to Illinois, but numerous western species of reptiles are known east of the Mississippi River only in Illinois and Indiana. These facts, and the apparently unfavorable habitat of the lower Mississippi River region, suggest that *P. melanoleucus* may occupy all the favorable areas in the southern states as far west as the Mississippi River. In that case our black specimens may be regarded as a local phase of *P. melanoleucus*.

Carination and scutellation are admittedly unsatisfactory in distinguishing *P. sayi* from *P. melanoleucus*. Our black example has five rows of smooth scales on the sides, and Mr. Loding informs me that the other specimen has the same number. This, while within the extreme of *P. melanoleucus* comes perhaps closer to the average for *P. sayi*. Similarly, the rostral dividing the internasals for only two thirds of their width rather suggests *P. sayi*. However, the Tennessee specimens, mentioned above, are practically like this black individual in carination and shape and size of rostral, while definitely *P. melanoleucus* in pattern. It therefore seems more satisfactory to assign these black specimens provisionally to *P. melanoleucus*.

The finding of more examples of *Pituophis* from these southern states will be awaited with much interest.

Following is a description of the black example from 14 miles southwest of Mobile, now deposited, through the kindness of Mr. Loding, in the United States National Museum (No. 62340):

Ventrals, 225; anal, single and entire; 57 divided caudals; upper labials, 8 on each side, lower labials 13 on the left side and 15 on the right; one preocular on each side; 4 postoculars on the left side and probably four on the right; about 4 remporals in the first row; rostral dividing the internasals for two thirds of their width; maximum number of scale rows, 29, anteriorly, 27, posteriorly 21; keels on dorsal scales prominent above, progressive fainter on the sides, descending as low as the sixth row anteriorly and the third row posteriorly. Total length 1800 millimeters; tail length 221 millimeters. Sex, female.

The coloration (by reference to Ridgway's Color Standards and Nomenclature) is often as follows: Above, fuscous black; below, slate color; on the head, between the parietals and the rostral, and including the upper labials, most of the scales having in their centers a development of orange-cinnamon mixed with the fuscous black; occasionally ventral scales, except on the anterior portion of the body, with flecks of perhaps an ivory yellow, or lighter, near their ends; and, along the sides of the tail and near its end, on most of the subcaudal scutes, some lighter coloration showing faintly through the black.

FRANK N. BLANCHARD,
University of Michigan.

GENUS: LEIMADOPHIS, Fitzinger.

LEIMADOPHIS FLAVILATUS (Cope) Stejneger & Barbour
(*Rhadinea flavilata*, Cope)
YELLOW-LIPPED SNAKE

Type locality: Fort Macon (near Beaufort) North Carolina.

General distribution: North Carolina to Florida and Alabama.

Alabama records: Mobile County, not uncommon in low cut-over pine lands under logs in early spring.

GENUS: **LAMPROPELTIS**, Fitzinger.*

LAMPROPELTIS ELAPSOIDES (Holbrook) Stejneger & Barbour
(*Osceola elapsoides*, Baird & Girard)

SCARLET KING SNAKE, OSCEOLA SNAKE, THUNDER SNAKE

Type locality: South Carolina and Georgia.

General distribution: North Carolina to Florida and west to New Orleans.

Alabama records: Mobile, Russell and Tuscaloosa counties.

Usually found early in the spring under logs and bark of dead pine trees.

LAMPROPELTIS GETULUS GETULUS (Linne) Cope
(*Ophibolus*, Cope)

KING-SNAKE, CHAIN-SNAKE

Type locality: Carolina.

General distribution: New Jersey to Central Florida west into Alabama.

Alabama records: Talladega and Baldwin counties.
A useful species.

LAMPROPELTIS GETULUS HOLBROOKI, Stejneger
(*Ophibolus getulus sayi*, Cope)

Type locality: Valley of the Mississippi.

General distribution: Western Alabama to Central Texas; north to Illinois and Indiana.

Alabama records: Mobile and Tuscaloosa counties.

LAMPROPELTIS GETULUS NIGER, (Yarrow)

Type location: Wheatland, Indiana.

General distribution: Indiana to Northern Alabama.

Alabama records: Colbert, Etowah, Calhoun, and Talladega counties.

*An exhaustive treatise of this genus may be found in Bull. 114, U. S. Nat. Mus.: A Revision of the King Snakes, by Frank N. Blanchard, 1921.

LAMPROPELTIS RHOMBOMACULATA (Holbrook) Cope
(*Ophibolus rhombomaculatus*, Baird & Girard)
BROWN KING-SNAKE, MOLECATCHER

Type locality: Georgia and Alabama.

General distribution: Maryland to Georgia and Alabama.

Alabama records: Mobile County.

A rare snake.

GENUS: CEMOPHORA, Cope.

CEMOPHORA COCCINEA (Blumenbach) Cope
SCARLET SNAKE

Type locality: Florida.

General distribution: Maryland to Florida and Louisiana.

Alabama records: Athens, Limestone County (Cope); University, Tuscaloosa County; Bayou la Batre, Mobile County.

GENUS: NATRIX, Laurenti. (*Tropidonotus*, Kuhl.)

NATRIX CLARKII (Baird & Girard) Cope
SALT WATER MOCCASIN, CLARK'S WATER SNAKE

Type locality: Indianola, Texas.

General distribution: Gulf Coast from western Florida west to Texas.

Alabama records: Mobile County, Bayous and beaches of the Mississippi Sound, Coden and Bayou la Batre.

This with other species of *Natrix* must be considered harmful in as much as their food consists largely of fish and frogs.

NATRIX CYCLOPIUM (Dumeril & Bibron) Cope
GREEN WATER SNAKE

Type locality: New Orleans.

General distribution: Florida to Louisiana and up the Mississippi Valley to Southern Illinois.

Alabama records: University, Tuscaloosa County, Three Mile Creek, Mobile County.

NATRIX RHOMBIFERA (Hallowell) Cope
DIAMOND-BACK WATER SNAKE

Type locality: Arkansas River.

General distribution: Southern Illinois and Indiana, south to Texas, Louisiana and Alabama.

Alabama records: Mobile County, Kelly's Pond; common in ponds and creeks.

NATRIX RIGIDA (Say) Cope
STRIPED WATER SNAKE

Type locality: The Southern States.

General distribution: The Carolinas to Florida and Alabama.

Alabama records: Montgomery County; Chastang, and Mt. Vernon, Mobile County.

NATRIX SEPTEMVITTATA (Say) Cope (*N. leberis*, Cope)
QUEEN-SNAKE, MOON-SNAKE

Type locality: Pennsylvania.

General distribution: Central, Eastern and Gulf States.

Alabama records: Walker County, and University, Tuscaloosa County.

NATRIX SIPEDON FASCIATA (Linne) Stejneger & Barbour
(*N. fasciata*, Cope; *Tropidonotus fasciatus sipedon* Boulenger)
BANDED WATER SNAKE, MOCCASIN

Type locality: Carolina.

General distribution: Virginia to Florida, west to Louisiana, and northward up the Mississippi Valley to Nebraska and Illinois.

Alabama records: Etowah, St. Clair, Tuscaloosa, Mobile and Baldwin counties.

Common in rivers, ditches, ponds and creeks, and often mistaken for the true poisonous Water Moccasin.

NATRIX SIPEDON ERYTHROGASTER (Shaw) Forster
(*N. fasciata erythrogaster*, Cope)
RED-BELLIED WATER SNAKE

This according to Stejneger and Barbour is only a color variety of the former. It has been recorded from Jef-

ferson and Bibb Counties, University, Tuscaloosa County, and Mount Vernon, Mobile County.

NATRIX TAXISPILOTA (Holbrook) Cope
WATER-PILOT

Type locality: South Carolina seaboard and the Altamaha River, Georgia.

General distribution: The Carolinas to Florida, west to Louisiana.

Alabama records: None.

GENUS: STORERIA, Baird and Girard. .

STORERIA DEKAYI (Holbrook) Baird & Girard
DEKAY'S SNAKE, GRASS-SNAKE, BROWN-SNAKE

Type locality: Massachusetts and New York.

General distribution: Eastern North America to Mexico.

Alabama records: University, Tuscaloosa County, Mobile County, very common.

STORERIA OCCIPITO-MACULATA (Storer) Baird & Girard
RED-BELLIED SNAKE, STORER'S SNAKE

Type locality: Amherst, Massachusetts.

General Distribution: Same as preceding

Alabama records: Cherokee, Calhoun, St. Clair, Tuscaloosa, Bibb, Conecuh, Mobile and Baldwin Counties.

GENUS: VIRGINIA, Baird and Girard.

VIRGINIA ELEGANS Kennicott

Type locality: Southern Illinois.

General distribution: Illinois, Indiana and Missouri. southward to Texas and eastward to Alabama.

Alabama records: Mobile County.

VIRGINIA VALERIAE Baird & Girard

Type locality: Kent County, Maryland.

General distribution: New Jersey to South Carolina, west to Tennessee and Alabama.

Alabama records: Indian Creek, Tuscaloosa County,
(Herbert H. Smith, April 15, 1912).

GENUS: POTAMOPHIS, Fitzinger.

POTAMOPHIS STRIATULUS (Linne) Garman
(*Haldea striatula*, Baird & Girard)
GROUND-SNAKE, WORM-SNAKE

Type locality: Carolina.

General distribution: Virginia and Minnesota south
to the Gulf States.

Alabama records: Mobile and Baldwin counties, com-
mon in low swampy fields.

GENUS: THAMNOPHIS, Fitzinger.

THAMNOPHIS SACKENII (Kennicott) Stejneger & Barbour
(*Eutaenia sackenii*, Kennicott)
OSTENSACKEN'S GARTER SNAKE, RIBBON SNAKE

Type locality: Florida.

General distribution: Florida to southern Mississ-
ippi.

Alabama records: Mobile County, lowlands.

THAMNOPHIS SAURITUS (Linne) Stejneger
(*Eutainia*, Baird & Girard)
RIBBON SNAKE

Type locality: Carolina.

General distribution: Michigan, Ontario, and Maine,
south to Mississippi, Alabama and Georgia

Alabama records: Talladega, Tuscaloosa, and Bar-
bour counties.

THAMNOPHIS SIRTALIS SIRTALIS (Linne) Garman
(*Eutainia*, Baird & Girard)
COMMON GARTER SNAKE

Type locality: Canada.

General distribution: Eastern North America.

Alabama records: Etowah, Shelby, Tuscaloosa,
Greene, Mobile and Baldwin Counties.

In Mobile County only the color variety passing under the name *T. sirtalis ordinatus* is found, and this is very common there. This form is also found in Tuscaloosa County.

GENUS: TANTILLA, Baird and Girard.

TANTILLA CORONATA Baird & Girard
CROWNED TANTILLA

Type locality: Kemper County, Mississippi.

General distribution: Southeastern United States.

Alabama records: Mobile and Baldwin Counties.

This species belongs to the so-called *Opisthoglyph* snakes, a division of mildly poisonous snakes with grooved fangs in the rear of the upper jaw, but the species is so small as to be absolutely harmless to man.

FAMILY: ELAPIDAE

GENUS: MICRURUS, Wagler.

MICRURUS FULVIUS (Linne) Stejneger & Barbour
(*Elaps fulvius*, Fitzinger)
CORAL-SNAKE

Type locality: Carolina.

General distribution: South Carolina and Mississippi to Florida, the Gulf States, Mexico and Central America.

Alabama records: Etowah County (van Aller) Greene County (Cope), Tuscaloosa County, Mobile County, Baldwin County (Capt. Bowen).

Recent observations have demonstrated the fact, that this beautiful and innocent-looking serpent really must be considered dangerously poisonous, and care must be taken not to mistake it for our harmless Kingsnake, *Lampropeltis elapsoides*, which in outward appearance it greatly resembles. The two may be distinguished by the rule mentioned under the directions for collecting and preserving.

During my two years' stay in Nicaragua, I often handled Coral-snakes in spite of continuous warnings of the natives, but never had any of these snakes even at-

tempt to bite me. I shudder now at the chances I took solely upon the authority of "Brehm's Thierleben" in which work this snake is said to be harmless to man.†

FAMILY: CROTALIDAE *

GENUS: AGKISTRODON, Beauvois. (Should have been *Ancistrodon*.)

AGKISTRODON MOKASEN Beauvois
(*Ancistrodon contortrix*, Baird)
COPPERHEAD

Type locality: America.

General distribution: Massachusetts southward to Northern Florida, westward to Illinois, Arkansas and Texas.

Alabama records: Walker, Jefferson, Shelby, Bibb, Tuscaloosa Counties, and Mt. Vernon, Mobile County.

AGKISTRODON PISCIVORUS (Lacepede) Cope
COTTON-MOUTH MOCCASIN, WATER MOCCASIN, STUMP-TAIL
MOCCASIN

Type locality: Carolina.

General distribution: Virginia to Florida and the Gulf States.

Alabama records: Tuscaloosa, Montgomery, Barbour, Mobile, and Baldwin counties.

This is the most common poisonous snake in the coast counties.

GENUS: SISTRURUS, Garman.

SISTRURUS CATENATUS CATENATUS (Rafinesque)
Garman
MASSASAUGA

Type locality: Prairies of the upper Missouri.

General distribution: Western New York, through Ohio to Nebraska, northward into Michigan and Ontario, southward to Kansas and Alabama.

Alabama records: Only one record of this snake from the State has come to my notice, the specimen was cap-

†See Proc. U. S. Nat. Mus. 17:334, 1895.

*All of the species belonging to this family are poisonous.

tured by Mr. Herbert H. Smith at Pratt's Ferry, Bibb County, and is preserved in the Alabama Museum of Natural History.

SISTRURUS MILIARIUS (Linne) Garman
GROUND RATTLER

Type locality: Carolina.

General distribution: North Carolina to Florida, Westward to Oklahoma and Texas.

Alabama records: University, Tuscaloosa County; Dothan, Houston County; Mobile and Baldwin Counties; not uncommon on cut-over pine lands.

GENUS: CROTALUS, Linne.

CROTALUS ADAMANTEUS Beauvois
DIAMOND-BACK RATTLER

Type locality: United States.

General distribution: Southern North Carolina to Florida, westward to Louisiana and Arkansas.

Alabama records: Mobile and Baldwin Counties; of rare occurrence.

During my twenty-five years of residence in Mobile I have spent hundreds of days tramping the woods in company with my friend, Mr. T. S. van Aller, covering practically every section of the county and I have seen only one specimen in its natural surroundings, and only about a dozen specimens have been noticed, dead, skinned or captured.

CROTALUS HORRIDUS Linne
TIMBER RATTLER, BANDED RATTLESNAKE, CHEVRON RATTLER
CANEBRAKE RATTLER

Type locality: America.

General distribution: Maine to Georgia, westward to the Great Plains.

Alabama records: Tuscaloosa County, Lock 15, Warrior River (Walter B. Jones, Nov. 1919), Pratt's Ferry, Bibb County (Herbert H. Smith), Greensboro, Hale County (Dr. W. C. Avery); Mobile County, two specimens have been seen and identified by the writer after having been skinned.

FAMILY: KINOSTERNIDAE

GENUS: KINOSTERNON, Spix. (Also spelled *Cinosternum*.)

KINOSTERNON CARINATUM (Gray) Stejneger & Barbour
(*Aromochelys carinata*, Gray; *A tristycha* Agassiz)
KEELED MUSK TURTLE

Type locality: Louisiana.

General distribution: Western Georgia to Louisiana.

Alabama records: Tuscaloosa and Talladega counties,
Sepulga River, between Butler and Conecuh counties,
Saraland, Mobile County (Hurter, as *K. tristychum*.)

KINOSTERNON ODORATUM (Latreille) Gray
(*Aromochelys* or *Sternotherus odoratus*)
COMMON MUD TURTLE, STINK POT

Type locality: Carolina.

General distribution: Eastern and Southern United States, west to western Missouri and southern Texas.

Alabama records: Barbour County; Kelly's Pond,
Mobile County.

KINOSTERNON SUBRUBRUM SUBRUBRUM (Lacepede)
(*Cinosternum pennsylvanicum*)
COMMON MUD TURTLE, STINK POT

Type locality: Pennsylvania

General distribution: Eastern United States, exclusive of peninsular Florida, west to Indiana, southeastern Illinois and Tennessee.

Alabama records: Barbour County, very common;
Mobile and Baldwin counties.

KINOSTERNON SUBRUBRUM HIPPOCREPIS (Gray)
Stejneger & Barbour

Type locality: New Orleans, Louisiana.

General distribution: Southern Alabama to Southeastern Missouri and Texas.

Alabama records: None. Inserted on the authority of Stejneger and Barbour, who give the above range for it.

FAMILY: CHELYDRIDAE

GENUS: MACROCHELYS, Gray.

MACROCHELYS TEMMINCKII (Holbrook) Gray (*M. lacertina*)
ALLIGATOR SNAPPER

Type locality: Mississippi river and tributaries.

General distribution: Texas east to southeastern Georgia and northern Florida, north in the Mississippi basin to northern Missouri.

Alabama records: Mobile Bay.

GENUS: CHELYDRA, Schweigger.

CHELYDRA SERPENTINA (Linne) Schweigger
COMMON SNAPPING TURTLE

Type locality: "Warmer regions."

General distribution: Eastern North America.

Alabama records: Etowah, Tuscaloosa, Barbour and Mobile Counties.

GENUS: TERRAPENE, Merrem.

TERRAPENE CAROLINA CAROLINA (Linne) Bell
(*Cistudo carolina*)
COMMON BOX TURTLE

Type locality: Carolina.

General distribution: Eastern United States.

Alabama records: St. Clair, Tuscaloosa and Mobile counties.

TERRAPENE CAROLINA TRIUNGUIS (Agassiz)
Stejneger & Barbour (*Cistudo triunguis* Agassiz)
THREE-TOED BOX TURTLE

Type locality: New Orleans, Louisiana.

General distribution: Coastal Plain of the Gulf of Mexico, west into Oklahoma and southern Texas and north in the Mississippi Valley to Missouri.

Alabama records: None.

*I saw a small (presumably young) dead specimen of what is probably this species in the Tennessee River bottoms in Limestone County, opposite Decatur, April 18, 1922. R. M. H.

TERRAPENE MAJOR (Agassiz) Baur (*Cistudo major* Agassiz)
LARGE BOX TURTLE

Type locality: Mobile, Alabama; Florida.

General distribution: Florida, north into Georgia and west into southeastern Texas.

Alabama records: Mobile, numerous specimens (Loding).

Several specimens have been studied in which the characters of *Terrapene carolina carolina* and *Terrapene major* seem to converge.

This species is frequently used for food and makes an excellent dish.

GENUS: MALACLEMYS, Gray.

MALACLEMYS PILEATA PILEATA (Wied) W. P. Hay
(*Malacoclemmys palustris*)
DIAMOND-BACK TERRAPIN

Type locality: New Orleans, Louisiana.

General distribution: Coast from mouth of Mississippi River east to Florida.

Alabama records: Cedar Point, Coden and Bayou la Batre, Mobile County.

MALACLEMYS PILEATA LITTORALIS (W. P. Hay)
Stejneger & Barbour
DIAMOND-BACK TERRAPIN

Type locality: Rockport, Texas.

General distribution: Coast of Texas and outlying islands, and Alabama.

Alabama records: Cedar Point and Coden, Mobile County.

The Diamond-Back Terrapins are eagerly sought for by epicures, and bring a high price in northern and eastern markets.

GENUS: GRAPTEMYS, Agassiz.

GRAPTEMYS PSEUDOGEOGRAPHICA PSEUDOGEOGRAPHICA (Gray) Holbrook. (*Malacoclemmys lesueuri*)
MAP-TURTLE

Type locality: Wabash River, New Harmony, Indiana.

General distribution: Mississippi Valley, east to Alabama and Ohio, north to Wisconsin and northern Iowa; west to eastern Kansas and Oklahoma.

Alabama records: None.

GRAPTEMYS PSEUDOGEOGRAPHICA KOHNII (Baur)
Stejneger & Barbour
(*Malacoclemmys kohnii*, Baur, Science 16; 263, 1890)
KOHN'S TERRAPIN

Type locality: Bayou Lafourche, Bayou Teche, and St. Martinsville, Louisiana.

General distribution: Gulf strip from Pensacola to eastern Texas.

Alabama records: None.

GRAPTEMYS PSEUDOGEOGRAPHICA OCULIFERA (Baur)
Stejneger & Barbour.

Type locality: Mandeville, La.

General distribution: West Florida to southern Louisiana.

Alabama records: None.

GRAPTEMYS (MALACOCLEMMYS) PULCHRA, Baur
(*Am. Nat.* 27:675-676, 1893)

Type locality: Alabama River, near Montgomery (T. H. Bean).

This species is not recognized by Stejneger and Barbour in their Check List.

GENUS: PSEUDEMYIS, Gray. (Cooters.)

PSEUDEMYIS ALABAMENSIS (Baur)
(*Chrysemys Alabamensis*)
ALABAMA TERRAPIN

Type locality: Mobile Bay, Alabama.

General distribution: Gulf Coast from Florida to Louisiana.

Alabama records: Mobile Bay; Mississippi Sound.

PSEUDEMY'S MOBILIENSIS (Holbrook)
(*Chrysemys mobiliensis*)
MOBILE TERRAPIN

Type locality: Mobile, Alabama.

General distribution: Southern portions of the Gulf States.

Alabama records: Mobile Bay.

Dr. Thomas Barbour of the Museum of Comparative Zoology, Cambridge, Mass., states that: "According to present usage *Pseudemys mobiliensis* is a synonym of *Pseudemys concinna* (LeConte)." (The recorded range for that species is from Maryland to Georgia.)

This and the preceding species are of much economic value to the State as a source of food supply."

PSEUDEMY'S ELEGANS (Wied) Cope
(*Chrysemys elegans*)
CUMMERLAND TERRAPIN

Type locality: New Harmony, Indiana.

General distribution: Southern Texas and Mississippi basin north to Iowa, northern Indiana and Ohio.

Alabama records: Near Anniston, Calhoun County.

PSEUDEMY'S HIEROGLYPHICA (Holbrook) Garman
(HIEROGLYPHIC TERRAPIN)

Type locality: Cumberland River, Tennessee.

General distribution: Ditmars in his Reptile Book gives Georgia, Alabama and Tennessee. The Stejneger-Barbour list gives the range as Rivers of Southern Appalachians.

Alabama records: The Alabama Museum of Natural History contains nine old specimens, presumably collected by Prof. Tuomey in the vicinity of Tuscaloosa about the middle of the last century.

GENUS: DIEROCHELYS, Agassiz.

DIEROCHELYS RETICULARIA (Latreille) Gray
(*Chrysemys reticulatus*)
CHICKEN TURTLE

Type locality: Carolina.

General distribution: Coastal Plain from Beaufort, North Carolina to central Florida and the Mississippi alluvial plain.

Alabama records: None.

GENUS: GOPHERUS, Rafinesque.

GOPHERUS POLYPHEMUS (Daudin) Stejneger
(*Testudo polyphemus*, Daudin)

GOPHER, LAND TURTLE

Type locality: Savanna and Altamaha Rivers, Georgia.

General distribution: Sandy, long-leaf pine forests from southern South Carolina to Florida and Texas, and perhaps north into southern Arkansas.

Alabama records: Around Grand Bay the Gopher is common on dry sandy banks covered with scrub oaks, it is typically terrestrial, and lives on fruits and herbage.*

FAMILY: CHELONIIDAE

GENUS: CHELONIA, Latreille.

CHELONIA MYDAS (Linne) Schweigger
GREEN SEA-TURTLE

Type locality: Ascension Islands, etc.

General distribution: Atlantic Ocean; Gulf of Mexico; occasionally as far north as Massachusetts.

Alabama records: Mobile Bay, and Mississippi Sound (J. A. Joullian).

GENUS: ERETMOCHELYS, Fitzinger.

ERETMOCHELYS IMBRICATA (Linne) Agassiz
(*Chelonia imbricata*)
HAWK'S-BILL TURTLE

Type locality: American seas.

General distribution: Similar to the preceding.

*It is sometimes eaten, especially by negroes, in West Florida, where it is much commoner than in Alabama. I have no definite recollection of seeing it in Alabama at all, or anywhere else west of Florida. For an interesting account of its habits see H. G. Hubbard in Science for August 4, 1893. R. M. H.

Alabama records: Included on the strength of the range given in the Stejneger-Barbour check list: "Florida and Gulf Coast."

GENUS: CARETTA, Rafinesque.

CARETTA KEMPPI (Garman) Siebenrock
(*Thalasocheilus* or *Lepidochelys kempfi*)

KEMP'S LOGGERHEAD TURTLE, BASTARD TURTLE

Type locality: Gulf of Mexico.

General distribution: Northeastern part of Gulf of Mexico and north to Cape Hatteras, or occasionally to Massachusetts.

Alabama records: Mississippi Sound (J. A. Joullian).^{*} All our sea turtles are much esteemed as food.

FAMILY: TRIONYCHIDAE

GENUS: AMYDA, Oken.

AMYDA FEROX (Schneider) Oken (*Platypeltis* or *Trionyx ferox*)
SOUTHERN SOFT-SHELL TURTLE

Type locality: Savannah River, Georgia.

General distribution: South Carolina to Florida and Louisiana.

Alabama records: One specimen from Fig Island, Mobile county. Occasionally reported from the Warrior River in Tuscaloosa County.

This turtle is edible.

AMYDA SPINIFERA (LeSueur) Hurter
SPINY SOFT-SHELLED TURTLE

Type locality: Wabash River, New Harmony, Ind.

General distribution: In rivers, Vermont and Pennsylvania to Montana and Colorado.

Alabama records: Tombigbee River near Demopolis (E. T. Norman, July 31, 1922).

^{*}Loggerhead turtles are reported from the Warrior and Alabama Rivers by fishermen and others, but they can hardly be this marine species. Presumably the snapping turtle is mistaken for it, See Proc. U. S. Nat. Mus. 17:320, 1895. R. M. H.

SUMMARY

According to our present information the number of species and varieties of amphibians and reptiles known and to be expected in Alabama may be summed up by larger groups as follows:

		<i>Certain</i>	<i>Doubtful</i>	<i>Total</i>
Amphibians.....	{ Tailed Amphibians.....	21	6	27
	{ Toads and Frogs.....	19	3	22
Reptiles.....	{ Crocodiles and lizards	9	1	10
	{ Snakes.....	43	4	47
	{ Turtles	19	8	27
Total		111	22	133

This is approximately the same number that have been recorded from other eastern states of about the same size, such as Virginia, North Carolina, Indiana, Missouri and Arkansas. Future exploration may be expected to transfer most of the doubtful species to the list of certain ones, and add others whose presence in Alabama is not now suspected, or distinguish forms not now regarded as distinct. As many of the counties in the state, particularly in the eastern half, have not been explored at all herpetologically, there is a great deal of work yet to be done. As an example of what may be done by thorough collecting, we have records of 89 species and subspecies from Mobile County, and 58 from Tuscaloosa County, and these figures probably do not exhaust the possibilities. Very likely at least half of the species known in the whole state could be found in any county.

COLLECTING AND PRESERVING OF REPTILES AND AMPHIBIANS FOR SCIENTIFIC AND MUSEUM PURPOSES

While scientifically the Reptiles and Amphibians may not be as closely related as has heretofore been conceded, yet the mode of collecting and preserving specimens is very similar, and for this reason may be treated under the same heading.

Unfortunately the average person seems to be inspired with fear and antipathy for these most useful and generally speaking harmless animals, adults and children alike consider it a religious duty, yes indeed! a heroic performance to kill at sight any animal that looks like a snake, not a thought do they give to the probability that such are placed in this world for some other purpose than to be a menace to human life.

There is, of course, the possibility, that many species may have outlived their usefulness and purpose, but the fact stands today that the great majority of these animals are performing a service to man that can not be replaced, and hardly over-estimated. In economic importance to agriculture and horticulture they may be classed equal to the birds and supplementing these in the task of keeping destructive insects and rodents within bounds. Nature adapted them to penetrate into underground nests and burrows and other places inaccessible to birds. It is unthinkable, that just the love of killing prompts the destruction of these harmless creatures, and nearly all such acts must be attributed to ignorance of the life and habits of these animals; in other words, to a lack of education.

The study of natural history in our public schools, has been much neglected, at least in the South. At best this study in a schoolroom does not interest the average child, but take him or her out into the fields and woods and show them nature alive, and the subject takes on an altogether different aspect.

To meet and get a speaking acquaintance with our reptiles and our toads, frogs and salamanders, we must know where and when to look for them.

In the winter and early spring months we find them usually in a semidormant state under logs and rocks, under bark of dead or dying trees, in the cavity of old rotten tree stumps, under moss, leaves and compost, and often deep in the ground; under such circumstances they fall an easy prey to the hunter. In the summer and fall we may find them in all of these places, but active and full of life. Most often at this time of the year we find them hunting their prey in the open field or forest undergrowth, in trees, or sunning themselves on a partly submerged log, on branches overhanging our rivers, creeks and lakes, or swimming in their waters.

Then, they are always on the alert, and often difficult to catch. All Amphibians, all of our Alabama lizards, and a large majority of our snakes can be taken and handled without the least danger of being bitten. Occasionally a black snake may draw blood as he gives you a nab in the finger, but it gives you no more inconvenience than the scratch of a thorn.

Salamanders and frogs we may have to fish for, using an earth-worm or a bit of red flannel as bait, quick running lizards may be shot with a parlor rifle using fine shot cartridges. Often one can use to advantage a fishing pole and line, with a slip-knot at the end to catch specimens which cannot be reached otherwise, stealthily slip the noose over his head, and a quick jerk will land him, this may be easier done if you can get the animal to concentrate its attention upon another person while you are slipping the line over its head.

A net is handy to catch water-snakes and Amphibians, and at times you may have to dig a specimen out of his hole. Altogether, the collecting of this class of animals calls for more strategy, and gives you more genuine sport and diversion, than most sportsmen get out of hunting and fishing, and it has the advantage that you preserve the specimen and can prove your snake story.

Before tackling any snake barehanded we should learn to know at sight our few poisonous ones. In Alabama we have only seven species to get acquainted with, six of these belong to the so-called pit-vipers and have identical

earmarks by which to recognize them: the broad square jaw and overlapping head shield which forms a pit at the side of the head between the eye and the snout. The seventh is our coral snake, a beautiful creature with red and black bands, separated by yellow rings.

The coloration of two of our harmless snakes so closely resemble this pattern, that a mistake is easily made; however, by observing the following rule you can never go wrong: in the coral or poisonous snake the red and black bands are separated by narrow yellow rings, and the snout is black; in the harmless snakes the red and yellow bands are separated by narrow black rings, and the snout is yellowish.

When hunting snakes with my old friend Hurter, I often saw him pick up moccasins and ground-rattlers by hand, he would grab them quickly by the end of the tail, lift them clear of the ground and drop them into his tin bucket. It may be comparatively safe to handle them this way; but I very much prefer the use of the snake pinchers. These I make out of two strips of sound ash wood about three feet long, one half to three quarter inch thick and an inch and a quarter wide. About four inches from one end I bore a hole and bolt the strips together loosely so as to make a pair of tongs similar to the longhandled tongs used by a blacksmith. A little notch cut on the inside of the four-inch ends will make a jaw to grasp and hold any snake around the neck.

On a collecting trip I always carry a few small but stout canvas bags in which to bring home the catch alive, preferably only one snake in each bag, but at times several of the same species may be put together in one bag. In the case of frogs and salamanders a sufficient supply of moist soil or moss must be enclosed with the specimens to keep them alive.

At the end of a day's collecting trip the catch must be killed, labeled and prepared for the preserving fluid.

One by one the specimens are removed from the collecting bags and killed by a hypodermic injection of from one teaspoonful to one ounce of 40 per cent Formaldehyde according to the size of the animal, for frogs, toads, and

salamanders use only one half this strength or a 20 per cent. solution. After the injection, which should be near the heart, drop them into a closed container, where they will be safe during the few minutes of death struggle.

When dead and before stiffened, inject them again with a weak or 4 per cent solution of formaldehyde and water in several places throughout the body, so that the solution may penetrate all parts and thus prevent decomposition. In the case of snakes an injection should be made in the tail, just behind the anal opening, this will bring out the genitals in male specimens and make them of more scientific value. The mouth of a poisonous snake is kept open and showing the fangs by the use of a small piece of carton or cotton inserted just behind the fangs between the upper and lower jaw. The specimen must now be labeled, writing with India ink on a Dennison label the name, date, locality, habitat, and name of collector, after which lay out the specimen in an attractive shape and form so as to fit the preserving jar and let it harden for about twelve hours, when it may be sealed up in a jar or vial filled with a solution of formaldehyde or grain alcohol. For the former solution use two ounces of 40 per cent. formaldehyde to each quart of water. When alcohol is used, it should be 75 per cent, grain alcohol for reptiles and 60 per cent. alcohol for amphibians.

Specimens should be looked over from time to time to see that they are covered with preserving fluid of the proper strength to keep them from decomposing.

IMPORTANT LITERATURE

It is beyond the scope of this report to include a bibliography; but for the guidance of prospective students it may be well to mention a few technical and popular text books in general use. Foremost among the former are the two National Museum Reports by Edward D. Cope, viz: "The Batrachia of North America", (Bulletin 34 of the U. S. National Museum 1889), and "The Crocodilians, Lizards and Snakes of North America", (Report

of U. S. National Museum for 1898). "Herpetology of Missouri" by Julius Hurter, (Transaction of the Academy of Science of St. Louis, 1911), contains good descriptions and very interesting accounts of the species found in that state.

Two of the most useful and captivating books on this subject may be found in the Nature Library published in 1907 by Doubleday, Page & Co., New York; one is entitled "The Reptile Book" by Raymond L. Ditmars, and the other "The Frog Book" by Miss Mary C. Dickerson. These two volumes give interesting and entertaining descriptions and beautiful plates, some colored, of nearly all Turtles, Crocodiles, Lizards, Snakes, Toads, and Frogs of the United States. A work almost indispensable to any student and collector is: "A Check List of North American Amphibians and Reptiles" by Leonhard Stejneger and Thomas Barbour, published by the Harvard University Press, Cambridge, Massachusetts, 1917.

On May 27, 1921, while paddling down the Locust Fork of the Warrior River with two companions, we saw one of these snakes swimming across the river near Sayre, Jefferson County. One of my companions killed it before we realized that it was this harmless species. R. M. HARPER.

ERRATA.

Page 5. For *Lingusta* (suborder) read *Linguata*.

Page 27. For footnote relating to *Heterodon contortrix* see page 53.

Page 42. The footnote on this page refers to *Chelydra serpentina*.

Page 46. Under *Gopherus polyphemus*, after Alabama records insert: Dog River and Grand Bay, Mobile County.

Page 53. The note on this page is a footnote relating to *Heterodon contortrix*, accidentally omitted from page 27. In the last line the last syllable of harmless was left out by the printers.

INDEX

Species are not indexed separately, for all those belonging to a given genus are listed on consecutive pages of the text, usually not more than two pages to a genus. Technical names of families and genera (both accepted names and synonyms) are printed in italics, and common names of species enclosed in quotations.

A			
<i>Abastor</i>	26	"Black snakes"	28, 29
<i>Acris</i>	17	Blanchard, Frank N., 7, 8, 30-33	
"Adder, spreading,"	27	"Blue-tailed skink"	25
<i>Agkistrodon</i>	39	Bowen, Capt.,	38
Aller, T. S. van		"Box-turtles"	42, 43
.....7, 8, 22, 25, 26, 38, 40		Brannon, P. A.,	8
"Alabama terrapin"	44	<i>Brevicipitidae</i>	21
"Alligator"	22	"Brown king-snake"	34
"Alligator lizard,"	23	"Brown snake"	36
"Alligator-snapper"	42	<i>Bufo</i> , <i>Bufo</i> <i>nidae</i> ,	16-17
<i>Amblystoma</i> , <i>Ambystoma</i>		"Bull-frogs"	20
.....11-12		"Bull-snake"	30, 31
"American Chameleon"	23	C	
"American toad"	16	"Cane-brake rattler"	40
<i>Amphiuma</i> , <i>Amphiumidae</i>		<i>Caretta</i>	47
.....9-10		<i>Carphophiops</i> , <i>Carphophis</i> ,	
<i>Amyda</i>	4726	
<i>Ancistrodon</i>	39	<i>Cemophora</i>	34
<i>Anguidae</i>	24	"Chain snake"	33
<i>Anolis</i>	23	"Chameleon"	23
<i>Aromochelys</i>	41	"Chameleon tree-frog"	19
Avery, Dr. W. C.,	40	<i>Chelonia</i>	46
B		<i>Cheloniidae</i>	46-47
"Banded rattlesnake"	40	<i>Chelydra</i>	42
"Banded water-snake"	35	<i>Chelydridae</i>	42-46
Barbour, Thomas	8, 45, 53	"Chevron rattler"	40
<i>Bascanium</i>	28	"Chicken snakes"	29
"Bastard turtle"	47	<i>Chondrotus</i>	11
Bean, T. H.	44	<i>Chorophilus</i>	17-18
Billings, Mac,	8	<i>Chrysemys</i>	44, 45
"Black bull-snake"	30	<i>Cinosternum</i>	41
"Black racer"	28	<i>Cistudo</i>	42, 43
		"Clark's water-snake"	34

- Cnemidophorus* 24
 "Coachwhip" 28
Coluber 28, 29
Colubridae 26-38
Compsosoma 30
 "Conger-eel" 9
 "Congo snake" 9, 10
 Cope, E. D.,
 8, 12, 29, 34, 38, 52
 "Copperhead" 39
 "Coral snake" 38
 "Corn snake" 29
 Corson, Dr. Jos., 25
 "Cotton-mouth moccasin" 39
 "Cricket-frog" 17
 "Crocodile," *Crocodylus*, 22
Crocodylidae, *Crocodylus*, 22
Crotalidae 39-40
Crotalus 40
Cryptobranchidae, *Crypto-*
 branchus, 10
 "Cumberland terrapin" 45
Cyclophis 28
- D
- "DeKay's snake" 36
Desmognathus 15
Diadophis 27
 "Diamond-back rattler" 40
 "Diamond-back terrapin" 43
 "Diamond-back water-
 snake" 35
 Dickerson, (Miss) M. C. 53
Diemyctylus 10
Dierochelys 45-46
 Ditmars, R. L., 8, 45, 53
 Dreyspring, Adolph 8
Drymarchon 30
 Dukes, W. C., 8
 Dunn, E. R., 7, 8, 13, 14
 "Dwarf salamander" 13
- E
- "Eared salamander" 15
 "Eft," red, 10
Elaphe 29
- Elapidae* 38-39
Elaps 38
Engystoma 21
Eretmochelys 46
Eurycea 13-15
Eutaenia, *Eutainia*, 37
- F
- Farancia* 26
 "Fence lizard" 23
 "Five-lined lizard" 25
 "Florida swift" 23
 "Florida tree-frog" 19
 "Four-toed salamander" 12
 "Fowler's toad" 16
 "Frogs" 17-20, 34
- G
- Gaines, Dr. Toulmin, 8
 "Garter-snakes" 37
Gastrophryne 21
 "Glass-snake" 24
 "Gopher," *Gopherus*, 46
 "Gopher-snake" 30
Graptemys 43-44
 "Grass-snake" 36
 "Gray rat-snake" 29
 "Green frog" 20
 "Green sea-turtle" 46
 "Green snakes" 27, 28
 "Green water-snake" 34
 "Ground-lizard" 24
 "Ground-rattler" 40
 "Ground-snake" 37
Gyrinophilus 13, 14
- H
- Haldea* 37
 Harper, R. M., notes by, (11)
 22-44, 28, (39) 42, (44),
 46, 47, 53
 "Hawk's-bill turtle" 46
 "Hell-bender" 10
Hemidactylum 12
 "Hermit spadefoot" 16
Heterodon 27, 53

"Hog-nosed snake"	27
"Holbrook's salamander"	14
"Hoop-snake," "Horn-snake"	26
"Horned toad"	23
Hubbard, H. G.,	46
Hurter, Julius	
.....7, 8, 22, 41, 51, 53	
<i>Hyla</i>	18-19
<i>Hylidae</i>	17-19

I

<i>Iguanidae</i>	23
"Indigo snake"	30

J

Jones, Walter B.,	40
"Jones, Walter B.,	40
Jones, W. R.,	8
Joullian, J. A.,	8, 46, 47

K

"Keeléd musk-turtle"	41
King, E. D., Jr.,	31
"King-snakes"	33, 34
<i>Kinosternidae</i> , <i>Kinosternon</i>	41
"Kohn's terrapin"	44

L

"Lamper-eel"	9
<i>Lampropeltis</i>	33-34, 38
"Land turtle"	46
<i>Leimadophis</i>	32
<i>Leiopisma</i>	24
"Leopard-frog," southern,	20
<i>Lepidochelys</i>	47
Lewis, Lucien,	8
<i>Liopeltis</i>	27
"Lizards"	23-25
Loding, Christian,	9
Loennberg, Einar, work of (referred to in footnotes, 39, 47).	
"Loggerhead turtle"	47
"Long-tailed salamander"	14
<i>Lygosoma</i>	24

M

McMickle, Thos.,	8
McNeill, L. H.,	8
<i>Macrochelys</i> ,	42
<i>Malaclemys</i>	43
<i>Malacoclemmys</i>	43, 44
<i>Manculus</i>	13
"Map-turtle"	43
"Marbled salamander"	11
Martin, Reese,	8
"Massasauga"	39
<i>Micrurus</i>	38
"Mobile terrapin"	45
"Moccasins"	34, 35, 39
"Mole-catcher"	34
"Mole salamander"	11
"Mud eel"	15
"Moon-snake"	35
"Mud-puppy"	9
"Mud-snake"	26
"Mud-turtle"	41
"Musk-turtle"	41

N

"Narrow-mouthed toad"	21
<i>Natrix</i>	22, 34-36
<i>Necturidae</i> , <i>Necturus</i> ,	9
"Newt," common,	10
Norman, E. T.,	26, 47
<i>Notophthalmus</i>	10

O

"Oak toad"	16
"Opaque salamander"	11
<i>Opheodrys</i>	28
<i>Ophibolus</i>	33, 34
<i>Ophisaurus</i>	24
Opisthoglyph snakes	38
<i>Osceola</i> (snake)	33
Owen, Thomas M.,	7, 8

P

Peters, Robert,	8
<i>Phrynosoma</i>	23
"Pickerel frog"	20
"Pickering's frog"	18
"Pilot-snake"	29

"Pine snake"	30
"Pine-wood tree-frog"	18
<i>Pituophis, Pityophis</i> ,	30-32
<i>Platyplestis</i>	47
<i>Plestiodon</i>	25
<i>Plethodon</i>	12-13
<i>Plethodontidae</i>	12-15
<i>Pleurodelidae</i>	10
<i>Potamophis</i>	37
<i>Pseudacris</i>	17-18
<i>Pseudemys</i>	44-45

Q

"Queen-snake"	35
---------------------	----

R

"Race-runner"	24
"Rainbow snake"	26
"Rain-toad"	19
<i>Rana, Ranidae</i> ,	19-21
"Rat-snakes"	29
"Rattlesnakes"	40
"Red-bellied snake"	36
"Red-bellied water-snake"	35
"Red eft"	10
"Red-headed lizard"	25
"Red salamander"	15
<i>Rhadinea</i>	32
"Ribbon-snakes"	37
"Ring-necked snake"	27
"Rough green snake"	28

S

"Salamanders"	11-15
<i>Salamandridae</i> ,	10
"Salt-water moccasin"	34
<i>Scaphiopodidae, Scaphiopus</i> ,	16
"Scarlet king-snake"	33
"Scarlet racer"	29
"Scarlet snake"	34
<i>Sceloporus</i>	23
<i>Scincidae</i>	24
"Scorpion"	25
"Sea-turtle"	46
<i>Siren, Sirenidae</i> ,	15
<i>Sistrurus</i>	39-40

"Six-lined lizard"	24
"Skink"	25
"Slimy salamander"	13
Smith, Eugene A.,	7, 8
Smith, Herbert H.,	7, 8, 26, 37, 40
Smith, Mrs. H. H.	8
"Smooth green snake"	27
"Snakes"	26-40
"Snapping turtle"	42, 47
"Soft-shelled turtles"	47
"Southern toad"	17
"Southern tree-frog"	19
"Spadefoot" (toad)	16
<i>Spelerpes</i>	14, 15
<i>Spilotes</i>	30
"Spiny swift"	23
"Spotted chicken-snake"	29
"Spotted salamander"	11
"Spreading adder"	27, 53
"Spring frog"	20
"Spring peeper"	18
Stejneger, L.,	8, 29, 53
<i>Sternothoerus</i>	41
"Stink-pot"	41
<i>Storeria</i>	36
"Striped water-snake"	35
"Stump-tail moccasin"	39
"Swamp tree-frog"	17
"Swifts"	23

T

<i>Tantilla</i>	38
<i>Teiidae</i>	24
<i>Terrapene</i>	42-43
"Terrapins"	43-45
<i>Testudo</i>	46
<i>Thalassochelys</i>	47
<i>Thamnophis</i>	37
"Three-toed box-turtle"	42
"Three-toed Congo snake"	10
Thompson, C. Lenoir,	8, 27
"Thunder-snake"	33
"Tiger salamander"	12
"Timber rattler"	40
"Toads"	16-17, 21

"Tree-frogs"	17-19	"Water moccasin"	39
<i>Trionychidae, Trionyx</i>	47	"Water-pilot"	36
<i>Tropidonotus</i>	34, 35	"Water-snakes"	22, 34-36
Tuomey, Michael,	45	"Whip-snake"	28
"Turtles"	41-47	"Worm-snake"	26, 37
"Two-legged eel"	15		
		Y	
V		"Yellow chicken-snake"	29
Van Aller, see Aller, T. S. van.		"Yellow-lipped snake"	32
<i>Virginia</i> (genus)	36	"Yellow rat-snake"	29
W		Z	
"Water-dog"	9	<i>Zamenis</i>	28
"Water lizard"	13		