Preliminary Analysis of the Reptiles of Arid Central West Africa*

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INTRODUCTION

During December, 1961, and again during December, 1965, the author traveled through the republics of Upper Volta, Mali, and Niger making a collection of reptiles. These specimens, numbering about 275, are deposited in the Museum of Vertebrate Zoology, University of California at Berkeley and at the California Academy of Sciences, San Francisco.

The author found that this collection, although small, was the largest single collection from this herpetologically unstudied part of Africa, and it was decided to write a paper on the material. This paper has been expanded to include not only an account of specimens collected with the description of a new subspecies of gecko, but also a checklist of species known from the area, and a bibliography of the herpetology of the area.

Because of poor communications, bad roads, and general lack of development, few biologists have worked in the “Mali Region.” Fernand Angel of the Paris Museum reported on a number of species from this area, and André Villiers of the Institut Francais d’Afrique Noire in Dakar, pioneered in the study of snakes of West Africa, which includes the study area of this paper.

An attempt to document the occurrence of every species of reptile within this area has been made in the checklist. However, this checklist certainly is not complete. Undoubtedly there are species to be discovered, and species from other parts of West Africa should be found here with more intensive collecting.

*Based on a thesis submitted in partial fulfillment of the requirements of the Master of Science degree at the University of San Francisco.
Detailed studies of the distribution of the reptiles in this part of Africa will show that the occurrence of a particular species is often determined by vegetation zones. A few species, such as *Agama agama* and *Hemidactylus brookii*, are found everywhere from the rain forest to the desert. However most species are restricted to one or two similar zones, for example *Chamaeleo africanus*, which is only found in Dry Savanna and Wooded Steppe.

Map 1 shows the vegetation zones of West Africa. Map 2 is an outline of the study area showing localities and regions where reptiles have been collected. Except for a few localities in Algeria, every locality in the checklist or mentioned in the text can be found on map 2. Preceding map 2 there is a locality list giving each locality with its latitude, longitude, and brief description.

**ACKNOWLEDGMENTS**

The author is indebted to many people whose advice and cooperation made this paper possible.

The staff of the Zoology Department of the University of Ghana, Legon, Ghana, granted me research facilities while I stayed in West Africa. In particular I would like to thank Dr. Jakes Ewer, Chairman of the Zoology Department for his cooperation. Dr. Su-tung Wen gave valuable advice and helped make my stay in Ghana enjoyable. Mr. Barry Hughes helped with the identification of my snake material and sent to me a list of his snake records from northern Ghana, which have been included in this paper.

Mr. John Ralph, Mr. Neal Hamre, and Mr. Rick Lawler traveled with me in Africa during 1965 and helped collect many of the specimens.

Dr. Alan Leviton of the California Academy of Sciences, San Francisco and Dr. Robert C. Stebbins of the Museum of Vertebrate Zoology, University of California at Berkeley, encouraged me to go to West Africa and also helped provide funds for travel.

Dr. Edward Kessel and Dr. Francis Filice of the Biology Department, University of San Francisco, encouraged me in my graduate studies.
Dr. Steven Anderson and Dr. Alan Leviton, both of the California Academy of Sciences, San Francisco, provided me with work space and always answered my questions. Dr. Leviton served as my advisor throughout this research program.

Also I would like to thank my father, Dr. George F. Papenfuss, for reading parts of my thesis and for locating many of the literature references that I needed.

DESCRIPTION OF THE AREA

The area covered in this study (cf. maps 1 and 2) is bounded by five geographic points: Aioun-el-Atrouss (300 m.), Mauritania in the northwest; Bamako (480 m.), Mali in the southwest; Babile and Gambaga, Ghana in the south; Nguigmi (248 m.), Niger (on the edge of Lake Chad) in the southeast; Tassili N’Ajjjer Mountains (1000–2000 m.), Algeria in the north. Reptiles collected within this area occur or are expected to occur in Mali.

The region included in this study ranges from relatively wet wooded savanna in the south to extreme desert in the north. South of the area the wooded savanna gradually merges into rain forest. In the north the Sahara Desert continues nearly to the Mediterranean Sea.

The vegetation zones of West Africa, which depend mainly on the amount of rainfall, run roughly East-West. An attempt to standardize the nomenclature of vegetation types of Africa south of the Tropic of Cancer has been made by Keay and Aubréville (1959). It must be pointed out that map 1 (adapted from Keay and Aubréville) does not give a completely accurate picture of these vegetation zones, because there may be a considerable ecotone between zones. Gallery forests extend along rivers well into the savanna, and in the case of the transition from subdesert to desert the ecotone may be one or two hundred miles wide. Photographs illustrate various habitats. Temperature and rainfall data for each zone are found in the table at the end of this section.

NORTHERN AREA WOODLAND AND GRASS SAVANNA
(Keay and Aubréville, 1959, pp. 8–9)

This zone has the greatest rainfall and lushest vegetation
of the zones in the study area. There is moderate rainfall between June and September and a definite dry season from November to May. Trees are abundant, but they do not form a continuous closed canopy. Grass frequently grows to a height of six to ten feet, making it difficult to walk through an area except along paths. Every year from December until the beginning of the rains, raging fires, often started by man for hunting purposes or to clear the ground for crops, burn most of the grass, leaving the fire-resistant trees unharmed. Temperature and rainfall data are given for Bamako.

This zone just enters the study area in a narrow band from Bamako through Bobo-Dioulasso to the vicinity of Dano. It then dips south into northern Ghana, Togo, and Dohomey and extends across Africa to extreme northeastern Uganda.

**Dry Savanna**

(Keay and Aubréville, 1959, p. 9)

There is a gradual transition from Northern Savanna into Dry
Savanna as one moves northward. The rainfall decreases, the average annual rainfall in the Northern Savanna at Bamako (1053 mm./yr.) being almost twice as much as at Niamey in the Dry Savanna (585 mm./yr.). Much of this area is densely populated, and cultivation and over grazing have disturbed the land. In undisturbed areas grass grows to a height of three to five feet. Scattered trees are present, but they rarely form clumps. Permanent water is found in rivers and in the flat country in occasional pools that are filled by the summer rains. Much of the grass burns during the dry season.

**Wooded Steppe**

(Keay and Aubréville, 1959, p. 10)

In the Wooded Steppe both the length of the rainy season and the amount of rainfall decreases. The average annual rainfall at Tombouctou (285 mm./yr.) is half that of Niamey. Two-thirds of the rain falls during July and August. The dominant trees, which are deciduous, small-leaved, thorny, and usually less than 15 feet tall, are members of the genus *Acacia*. In some
Figure 3. Wooded steppe near Hombori, Mali.

Figure 4. Wooded steppe near Tombouctou, Mali.
Savanna as one moves northward. The rainfall decreases, the average annual rainfall in the Northern Savanna at Bamako (1053 mm./yr.) being almost twice as much as at Niamey in the Dry Savanna (585 mm./yr.). Much of this area is densely populated, and cultivation and overgrazing have disturbed the land. In undisturbed areas grass grows to a height of three to five feet. Scattered trees are present, but they rarely form clumps. Permanent water is found in rivers and in the flat country in occasional pools that are filled by the summer rains. Much of the grass burns during the dry season.

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areas the trees form thickets, but more often they are widely scattered. Herbaceous plants and grass less than three feet high grow between the trees, but since there is not a continuous carpet, there are not extensive fires during the dry season. Much of the ground, especially in the northern part of the wooded steppe, is sandy. Low fixed sand dunes are present. The great Niger River, often one to two miles wide, flows through this zone. Between Mopti and Tombouctou the Niger breaks into an inland delta of lakes and marshes. Along the Niger and within the inland delta, several species of forest and moist savanna reptiles such as *Varanus niloticus*, *Causus rhombeatus*, and *Natriciteres olivaceus* have been collected.

**Subdesert Steppe**

*(Keay and Aubréville, 1959, p. 10)*

In West Africa there is a Subdesert Steppe between the Wooded Steppe and the Sahara Desert. Especially in the northern part of this zone, rain does not always fall every year, except in the two mountainous regions; the Adrar des Iforas of Mali and the Aïr of Niger. The entire rainfall of a given year may take place during one or two heavy afternoon showers. The average annual rainfall at Agadez (126 mm./yr.) on the edge of the Aïr Mountains is less than half that of the Wooded Steppe at Tombouctou (285 mm./yr.). Thorny trees of the Wooded Steppe occur locally, especially along the edges of wadis. Low grass grows in tufts separated from one another by large bare sandy spaces. Low dunes both fixed and wind-blown are present, often separated by barren pebble-covered flats.

In the Hoggar Mountains of the Algerian Sahara there is an extensive area of Subdesert Steppe above 3000 feet elevation.

**Desert**

*(Keay and Aubréville, 1959, p. 10)*

The portion of the Sahara Desert within the study area is without regular rainfall. At Djanet the average annual rainfall is 18 mm./yr. The record, made over a period of 15 years, includes years when no rain fell. In the southern Sahara the
Figure 5. Subdesert steppe near Kidal, Mali.

Figure 6. Subdesert steppe near Kidal, Mali.
occasional rains occur during the summer from tropical storms moving north. In the northern Sahara the rain comes from winter Mediterranean storms. Central areas, such as the Hoggar Mountains, may have occasional rains during both the summer and winter. In many areas there is a very scattered permanent vegetation of low bushes and even small trees along wadis. During the years when a rain falls, a low covering of grass and herbs grows. This covering, known as "acheb," passes through its life history in a few weeks, and is then scorched by the sun and scattered by the wind, leaving no trace.

Sandy soil and wind-blown dunes known as "erags" may alternate with barren gravel "regs." The mountain masses of the Hoggar, Teffedest, and Tassili N‘Ajjer are found in the north-east part of the study area. Volcanic peaks in the Hoggar are from 7000 to 9000 feet above sea level. Permanent water is found in some of the canyons in these mountain masses. *Bufo viridis* is found here and *Crocodylus niloticus* has been reported from the Tassili N‘Ajjer.
<table>
<thead>
<tr>
<th>Location</th>
<th>Max. Temperatures</th>
<th>Min. Temperatures</th>
<th>Rainfall</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>Bafoussam</td>
<td>36</td>
<td>24</td>
<td>180</td>
<td>60</td>
</tr>
<tr>
<td>Douala</td>
<td>31</td>
<td>22</td>
<td>130</td>
<td>60</td>
</tr>
<tr>
<td>Yaoundé</td>
<td>32</td>
<td>22</td>
<td>100</td>
<td>60</td>
</tr>
</tbody>
</table>

**Notes:**
- Rainfall is given in millimeters per year (mm/yr).
- Temperature data is given in degrees Celsius (°C).
- The table includes data from different regions, including the Northern Savanna, Dry Savannah, Wooded Savannah, and Desert areas.
- Special notes indicate conditions like "not given," "28°.," and "25°."
MAP 1. Vegetation zones of West Africa.
LOCALITIES

Algeria

Localities in Algeria are taken from the *Times Gazetteer of the World* and from World Aeronautical Charts of the area. A number of localities in the mountain regions of the Hoggar, Tefedest, and Tassili N’Ajjer were not located. Geographic coordinates are given when available.

<table>
<thead>
<tr>
<th>Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrar in Gechika</td>
<td>?</td>
<td>?</td>
<td>Mountain</td>
</tr>
<tr>
<td>Amguid</td>
<td>26 26 N.</td>
<td>5 20 E.</td>
<td>Town</td>
</tr>
<tr>
<td>Amsel</td>
<td>22 38 N.</td>
<td>5 26 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Arak</td>
<td>25 20 N.</td>
<td>3 46 E.</td>
<td>Fort</td>
</tr>
<tr>
<td>Ararne (Tefedest)</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Assakao</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Azaka Emiré</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Djanet</td>
<td>24 41 N.</td>
<td>9 25 E.</td>
<td>Town</td>
</tr>
<tr>
<td>Erg d’Admer</td>
<td>24 20 N.</td>
<td>9 20 E.</td>
<td>Dune</td>
</tr>
<tr>
<td>Hamada de Tim Gechika</td>
<td>?</td>
<td>?</td>
<td>Rocky desert</td>
</tr>
<tr>
<td>Hoggar</td>
<td>23 20 N.</td>
<td>6 00 E.</td>
<td>Mountains</td>
</tr>
<tr>
<td>Imarera</td>
<td>23 22 N.</td>
<td>5 43 E.</td>
<td>Well</td>
</tr>
<tr>
<td>In Ameri (Hoggar)</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>In Baragen (Tefedest)</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Issalane</td>
<td>22 34 N.</td>
<td>7 55 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Mont Ilaman (Hoggar)</td>
<td>23 14 N.</td>
<td>5 30 E.</td>
<td>Mountain</td>
</tr>
<tr>
<td>Oued Ahetes (Tefedest)</td>
<td>?</td>
<td>?</td>
<td>Wadi</td>
</tr>
<tr>
<td>Oued Edjeoui (Hoggar)</td>
<td>?</td>
<td>?</td>
<td>Wadi</td>
</tr>
<tr>
<td>Oued Ilezi</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Oued Rofat</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Silet</td>
<td>22 40 N.</td>
<td>4 34 E.</td>
<td>Town</td>
</tr>
<tr>
<td>Tahifet</td>
<td>22 56 N.</td>
<td>6 00 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Tamanrasset</td>
<td>22 47 N.</td>
<td>5 32 E.</td>
<td>Town</td>
</tr>
<tr>
<td>Tamrit</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Tassili de Timissao</td>
<td>?</td>
<td>?</td>
<td>Mountains</td>
</tr>
<tr>
<td>Tassili N’Ajjer</td>
<td>24 40 N.</td>
<td>9 40 E.</td>
<td>Mountains</td>
</tr>
<tr>
<td>Tazerouk</td>
<td>23 25 N.</td>
<td>6 16 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Tefedest</td>
<td>24 30 N.</td>
<td>5 30 E.</td>
<td>Mountains</td>
</tr>
<tr>
<td>Tékébrine</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Tigen Daouo (Hoggar)</td>
<td>23 05 N.</td>
<td>5 35 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Tigharghart (Hoggar)</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Tiror (Tassili)</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Todock</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Woudi</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>
GHANA

Only the extreme northern part of Ghana is included in the area of study. All the localities are found in the United States Board on Geographic Names, Official Standard Names Gazetteer No. 102: Ghana, 1967.

<table>
<thead>
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<th>Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Babile</td>
<td>10 31 N.</td>
<td>2 50 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Bawku</td>
<td>11 03 N.</td>
<td>0 15 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Binduri</td>
<td>10 59 N.</td>
<td>0 18 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Bolgatanga</td>
<td>10 47 N.</td>
<td>0 51 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Gambaga</td>
<td>10 32 N.</td>
<td>0 26 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Lawra</td>
<td>10 39 N.</td>
<td>2 52 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Navrongo</td>
<td>10 54 N.</td>
<td>1 06 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Pusiga</td>
<td>11 05 N.</td>
<td>0 07 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Tumu</td>
<td>10 52 N.</td>
<td>1 59 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Wiaga</td>
<td>10 39 N.</td>
<td>1 16 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Zorsa (see Zwase)</td>
<td>11 03 N.</td>
<td>0 18 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Zwase</td>
<td>10 47 N.</td>
<td>0 48 W.</td>
<td>Populated place</td>
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</table>

MALI

All the localities are found in the United States Board on Geographic Names, Official Standard Names Gazetteer No. 93: Mali, 1965.

<table>
<thead>
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<tbody>
<tr>
<td>Anefis I-N-Darane</td>
<td>18 03 N.</td>
<td>0 36 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Ansongo</td>
<td>15 40 N.</td>
<td>0 30 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Asler</td>
<td>18 53 N.</td>
<td>1 16 E.</td>
<td>Waterhole</td>
</tr>
<tr>
<td>Bamako</td>
<td>22 39 N.</td>
<td>8 00 W.</td>
<td>City</td>
</tr>
<tr>
<td>Bandiagara</td>
<td>14 21 N.</td>
<td>3 37 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Baoulé</td>
<td>12 53 N.</td>
<td>8 37 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Bourem</td>
<td>16 57 N.</td>
<td>0 21 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Diararabé</td>
<td>14 09 N.</td>
<td>5 01 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Djéndé</td>
<td>13 54 N.</td>
<td>4 33 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Dogo</td>
<td>15 10 N.</td>
<td>4 26 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Douentza</td>
<td>15 00 N.</td>
<td>2 57 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>El Ouit</td>
<td>19 23 N.</td>
<td>0 39 E.</td>
<td>Locality</td>
</tr>
<tr>
<td>Gao</td>
<td>16 16 N.</td>
<td>0 03 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Goundam</td>
<td>16 25 N.</td>
<td>3 40 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Gourao</td>
<td>15 19 N.</td>
<td>4 02 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Hombori</td>
<td>15 17 N.</td>
<td>1 42 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Kati</td>
<td>12 44 N.</td>
<td>8 04 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Katibougou</td>
<td>12 30 N.</td>
<td>8 05 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Kayo</td>
<td>13 53 N.</td>
<td>5 37 W.</td>
<td>Populated place</td>
</tr>
</tbody>
</table>
### Mauritania

Only a single locality is found in the eastern part of Mauritania included in the study area. Aioun-el-Atrouss (16 40 N., 9 37 W.) is a major town.

### Niger

All of the localities listed, except some in the Aïr Mountains, are found in the United States Board on Geographic Names, Official Standard Names Gazetteer No. 99: Niger, 1966. Localities in the Aïr Mountains are found on maps in the following publication: Mémoires de l’Institut d’Afrique noire, No. 10, 1950.

<table>
<thead>
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<th>Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Agadez</td>
<td>16 58 N.</td>
<td>7 59 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Air</td>
<td>18 00 N.</td>
<td>8 30 E.</td>
<td>Massif</td>
</tr>
<tr>
<td>Assouas</td>
<td>16 52 N.</td>
<td>7 27 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Azzel</td>
<td>17 00 N.</td>
<td>7 58 E.</td>
<td>Wadi</td>
</tr>
<tr>
<td>Bilma (out of area)</td>
<td>18 41 N.</td>
<td>12 56 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Birni Nkonni</td>
<td>13 48 N.</td>
<td>5 15 E.</td>
<td>Populated place</td>
</tr>
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</table>
### Reptiles of Arid West Africa — Papenfuss

<table>
<thead>
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<th>Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dabaga (Aïr)</td>
<td>?</td>
<td>?</td>
<td>Camp</td>
</tr>
<tr>
<td>Dungas</td>
<td>13 04 N.</td>
<td>9 20 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Goufat, Oued</td>
<td>17 03 N.</td>
<td>7 49 E.</td>
<td>Wadi</td>
</tr>
<tr>
<td>Iferouâne</td>
<td>19 04 N.</td>
<td>8 24 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>I-N-Abanherit</td>
<td>17 54 N.</td>
<td>6 03 E.</td>
<td>Well</td>
</tr>
<tr>
<td>I-N-Gall</td>
<td>16 47 N.</td>
<td>6 56 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Irabellaben (Aïr)</td>
<td>?</td>
<td>?</td>
<td>Wadi</td>
</tr>
<tr>
<td>Jadal</td>
<td>18 37 N.</td>
<td>5 00 E.</td>
<td>Region</td>
</tr>
<tr>
<td>Nguigmi</td>
<td>14 15 N.</td>
<td>13 07 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Namey</td>
<td>13 31 N.</td>
<td>2 07 E.</td>
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</tr>
<tr>
<td>Matnakari</td>
<td>13 46 N.</td>
<td>4 01 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Sederer</td>
<td>17 59 N.</td>
<td>4 46 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Tabello (Aïr)</td>
<td>?</td>
<td>?</td>
<td>Camp</td>
</tr>
<tr>
<td>Taferisit</td>
<td>16 30 N.</td>
<td>5 56 E.</td>
<td>Well</td>
</tr>
<tr>
<td>Tahoua</td>
<td>14 54 N.</td>
<td>5 16 E.</td>
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</tr>
<tr>
<td>Tamao</td>
<td>12 45 N.</td>
<td>2 11 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Tapoa</td>
<td>12 29 N.</td>
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</tr>
<tr>
<td>Tasseessat</td>
<td>17 38 N.</td>
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</tr>
<tr>
<td>Tazerzait, Mont</td>
<td>18 30 N.</td>
<td>4 46 E.</td>
<td>Mountain</td>
</tr>
<tr>
<td>Teouar</td>
<td>?</td>
<td>?</td>
<td>Camp</td>
</tr>
<tr>
<td>Zinder</td>
<td>13 48 N.</td>
<td>8 59 E.</td>
<td>Populated place</td>
</tr>
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</table>

### Nigeria

Localities in Nigeria are taken from G. T. Dunger’s publications on the lizards and snakes of Nigeria (see bibliography). Only the Northwestern Nigeria is included in the study area.

<table>
<thead>
<tr>
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<td>Argungu</td>
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<tr>
<td>Birnin Kebbi</td>
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<td>4 12 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Ilela</td>
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<td>5 18 E.</td>
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<tr>
<td>Kalgo</td>
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<td>4 09 E.</td>
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<tr>
<td>Katsina</td>
<td>13 00 N.</td>
<td>7 37 E.</td>
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<tr>
<td>Kware</td>
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<td>5 16 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Rimi</td>
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<td>7 42 E.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Sokoto</td>
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<td>5 15 E.</td>
<td>Populated place</td>
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### Upper Volta

Localities in Upper Volta are found in the United States Board on Geographic Names, Official Standard Names Gazetteer No. 87: Upper Volta, 1965.

<table>
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<th>Description</th>
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<td>Dano</td>
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<td>3 04 W.</td>
<td>Populated place</td>
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<td>Name</td>
<td>Latitude</td>
<td>Longitude</td>
<td>Description</td>
</tr>
<tr>
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<td>Diébougou</td>
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<td>Fada Ngourma</td>
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<td>0 21 E.</td>
<td>Populated place</td>
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<tr>
<td>Garango</td>
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<td>0 34 W.</td>
<td>Populated place</td>
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<tr>
<td>Ouagadougou</td>
<td>12 22 N.</td>
<td>1 31 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Pama</td>
<td>11 15 N.</td>
<td>0 42 E.</td>
<td>Populated place</td>
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<tr>
<td>Tenkodogo</td>
<td>11 47 N.</td>
<td>0 22 W.</td>
<td>Populated place</td>
</tr>
<tr>
<td>Toussiana</td>
<td>10 50 N.</td>
<td>4 37 W.</td>
<td>Populated place</td>
</tr>
</tbody>
</table>
REPTILES OF ARID WEST AFRICA — PAPENFUSS

SPECIES ACCOUNTS

**Hemidactylus brookii angulatus** (Hallowell).

**Material.** (2) MALI: CAS 103236–37; Hombori, December 13, 1965.

**Remarks.** Both specimens, the only two seen, were collected at night among rocks.

**Ptyodactylus hasselquistii** (Donndorff).

**Material.** (26) MALI: CAS 103239–44; Kidal Road, 40 miles NE. of Anefis, December 17, 1965; MVZ 75475; Bandiagara, December 13, 1961; CAS 103235; Hombori, December 13, 1965; MVZ 75477; Hombori, December 17, 1961; CAS 103258–62; 2 miles S. of Airport, Mopti, December 10, 1965; MVZ 75476; Sangha (Sanga), December 13, 1961; CAS 103268–71; Sangha (Sanga), December 6, 1965. UPPER VOLTA: MVZ 75481–84; Fada N’Gourma, December 24, 1961.

**Remarks.** At Fada N’Gourma the lizards were collected on the walls inside a shed. At the other localities they were always found among rocks. Near Mopti they were abundant in the same crevices as *Tarentola annularis*. Northeast of Anefis, in the rocky Adrar des Iforas, these geckos were actively running about large boulders in the late afternoon and could be seen on the shaded side of boulders during midday. Shortly after dark they were no longer active, probably because of the cold nights in the desert during December. A single specimen, MVZ 75482 from Fada N’Gourma, contained two developed eggs.

**Stenodactylus petrii** Anderson.

**Material.** (1) MALI: CAS 103272; 42 miles N. of Bourem, December 15, 1965.

**Remarks.** CAS 103272 differs from three specimens examined from Libya in toe structure. The former has 38 lamellae on the fourth toe where as the latter specimens have 28, 28, and 29 lamellae. In addition, the Mali specimen has two scale rows on each side of the central row of digital lamellae while the Libya specimens have only one row. In these two characters the Mali
gecko is similar to the type of *Stenodactylus climensis* Barbour (1914, pp. 79–80) from Wadi Gharandel, Sinai, Egypt. The type, MCZ 9631, synonymized by Loveridge (1947, p. 42) with *S. petrii*, has 39 fourth toe lamellae and on the hind feet only, a partial second scale row on each side of the central row of digital lamellae.

*Stenodactylus petrii* is found from Algeria to Israel. In West Africa it occurs south at least to the bend of the Niger River (Bourem) and in the Air Mountains of Niger Republic.

The specimen was found about an hour after dark as it ran across a low sand dune.

**Stenodactylus sthenodactylus** (Lichtenstein).

**Material.** (3) Mali: CAS 84210–212; Elequitt (El Ouit), November 22, 1948.

**Remarks.** The three specimens agree with the description of *S. sthenodactylus sthenodactylus* given by Loveridge (1947, pp. 44–47) rather than with the description of *S. sthenodactylus mauritanicus* (1947, pp. 47–50). The former subspecies has been collected some 500 miles to the southeast of Elequitt at Agadez (Angel, 1950, p. 331), whereas the latter is known from Mauritania to the west, Tanezrouft to the north, and the Hoggar Mountains to the northeast.

**Tarentola annularis** (Geoffroy).

**Material.** (26) Mali: MVZ 75455–56; Timbuctu (Tombouctou), December 20, 1961; MVZ 75453; Gao, December 18, 1961; MVZ 75448–52; Bandagiara, December 13, 1961; MVZ 81417–18; Bandagiara, December 6, 1965; CAS 103198–204; Bandagiara, December 6, 1965; MVZ 81400; 2 miles S. of airport, Mopti, December 10 1965; CAS 103263–67; 2 miles S. of airport, Mopti, December 10, 1965; CAS 84213–14; Elequitt (El Ouit), November 22, 1948.

**Tarentola ephippiata** (O’Shaughnessy).

**Material.** (4) Mali: MVZ 75454; Gao, December 17, 1961; MVZ 75447; Hombori, December 17, 1961; MVZ 75830, CAS 103273; Timbuctu (Tombouctou), December 20, 1961.
Comparison of *T. annularis* and *T. ephippiata*. Grandison (1961) has pointed out that *T. annularis* and *T. ephippiata* are valid species, sympatric throughout much of their range. The above cited 30 specimens from Mali can be separated into *T. annularis* (26 of 30) and *T. ephippiata* (4 of 30) using Grandison's characters and others mentioned below.

1. Number of rows of dorsal tubercles.
   - *T. ephippiata*: range 16 ($X = 16$, $N = 4$).

2. Number of scales under fifth toe.

Both Grandison and Loveridge (1947) have used scale counts of the first and fourth toe in their discussions of *Tarentola*. However, these counts may overlap in the two species. The fifth toe count, which includes both sensors and scales to the base of the toe, shows a mean difference of 7.0 between the two species in the specimens examined. Grandison's other characters hold for the present series; however, tooth counts were not made.

The most striking difference between the two species, which seems to have been overlooked by both Grandison and Loveridge, is the number of midbody scale rows. These counts were made between the enlarged granules.

   - *T. annularis*: range 154–194 ($X = 172.8$, $N = 26$).
   - *T. ephippiata*: range 90–98 ($X = 93.8$, $N = 4$).

As seen in table 2, four specimens of *T. annularis* from Chad, Sudan, and Egypt fit into the range of the Mali material. Two specimens of *T. neglecta* were also examined; LACM 25288, reported on by Wake and Kluge (1961), can not be separated from *T. ephippiata*, and MCZ 21949, Tunisia: "Erlanger leg. Received from Berlin Mus.", is probably *T. ephippiata*. Only slight differences are apparent. The most lateral five rows of enlarged tubercles on each side are more regularly arranged than the Mali *T. ephippiata*, and the sensors under the fifth toe are larger and fewer in number. Grandison has pointed out that *T. panousei* from Morocco is a synonym of *T. ephippiata* and that *T. delalandii hoggarensis* from the Hoggar Mountains of southern Algeria is probably also a synonym of *T. ephippiata*. It
seems reasonable that populations of "ephippiata"-like *Tarentola* occurring in southern Algeria, Tunisia, and Libya, which have been called *T. neglecta*, are at most only subspecifically distinct from populations of *T. ephippiata* found to the south and west.

**Habitat.** *T. ephippiata* was less common than *T. annularis*. Only at Tombouctou did they seem to be equally abundant. Here both species were taken at night on walls. *Tarentola annularis* was found on walls of the hotel, while *T. ephippiata* was seen only on the walls of a deserted courtyard. At Gao both species were found on the walls of a hotel. A single specimen of *T. ephippiata* was collected at Hombori; however, only one day was spent there. At Bandiagara, on the Bandiagara Plateau, and near Mopti, 40 miles away at the base of the Bandiagara Plateau, only *T. annularis* was found. At both localities it was very common in rock crevices, often occurring together in the same crevices with the equally common *Ptyodactylus hasselquistii*.

**Table 2. Tarentolas from Mali.**

<table>
<thead>
<tr>
<th>Mus. No.</th>
<th>Locality</th>
<th>Dorsal Tubercles</th>
<th>Scales Under</th>
<th>Midbody Scale Rows</th>
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<tr>
<td></td>
<td></td>
<td>Rows</td>
<td>Fifth Toe</td>
<td></td>
</tr>
<tr>
<td><em>Tarentola annularis</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVZ 75455</td>
<td>Tombouctou</td>
<td>12</td>
<td>22</td>
<td>170</td>
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<td>MVZ 75456</td>
<td>Tombouctou</td>
<td>12</td>
<td>24</td>
<td>162</td>
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<tr>
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<td>Gao</td>
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<tr>
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<tr>
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<tr>
<td>CAS 103204</td>
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<td>MVZ 81400</td>
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<td>CAS 103263</td>
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<td>CAS 103264</td>
<td>Mopti</td>
<td>12</td>
<td>179</td>
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</table>
Tarentola ephiippiata
CAS 103273 Tombouctou 16 20 98
MVZ 78830 Tombouctou 16 18 90
MVZ 75447 Hombori 16 17 92
MVZ 75454 Gao 16 19 95

Table 3. Tarentolases from Chad, Sudan, Egypt, and Tunisia.

Tarentola annularis
LACM 25286 Chad: Oum Chalouba 12 27 168
LACM 25287 Chad: Gongo 12 23 170
CAS 55180 Sudan: Khartoum 14 23 170
CAS 55053 Egypt 12 26 177
Tarentola ephiippiata (Tarentola neglecta?)
LACM 25288 Chad: Gongo 15 17 94
MCZ 21949 Tunisia 16 15 98

Tropiocolotes tripolitanus apoklomax Papenfuss, new subspecies.

Holotype. California Academy of Sciences 103209, an adult male from Sanga, Mali, collected by T. Papenfuss (field no. 3098), December 6, 1965.

Diagnosis. Midbody scale-rows 54 (in type), range 46–54 (X = 52.1 ± 2.0 SD. ± 0.4 SE; N = 21). Enlarged chin shields present behind postmentals. Postmental prevents chin shields from contacting first lower labial.

Paratypes. Twenty paratypes have been examined. MALI: CAS 103207–08, 103210, 103213 from the type locality, Sanga; CAS 103205–06, MVZ 75437–43, Bandiagara; CAS 103213–14, MVZ 75432–36, Hombori.

Description of Holotype. Snout acutely pointed, longer than the distance between the eye and the ear-opening; rostral broader
than high, with median cleft above, extending nearly to mouth; scales on anterior of snout rugose, becoming keeled posteriorly; nostril between rostral, first labial, and two nasals; upper labials 9–10; lower labials 7–7; mental triangular; a pair of large post mentals in contact on the median line, forming a suture with the first and second lower labials, followed by two pairs of chin-shields, the first nearly the size of the postmentals, the second one-third the size of the first.

Back, belly, limbs, and tail covered with keeled scales, those on the belly smaller than those on the back; midbody scale rows 54; limbs short, adpressed hind limb not quite reaching the axilla; head and body depressed; tail longer than head and body; total length, 57 mm.; snout-vent, 26 mm.; tail, 31 mm.

COLOR OF HOLOTYPE. Above, pale brown, with scattered darker brown scales; each scale with scattered minute black flecks; a dark brown streak runs from nostril to beyond shoulder; limbs colored as back; tail with eleven brown crossbars; dorsal pattern merges into ventral region; mid-ventral region pale.

FIELD OBSERVATIONS. Specimens were collected December 13, 1961 and December 6, 1965 at Bandiagara; December 17, 1961 and December 13, 1965 at Hombori; December 6, 1965 at Sanga. At Sanga and Bandiagara all were found during the day under rocks which were lying on sandy ground near rock outcrops. At Hombori specimens were collected during the day in the village under rocks lining trails and at night active on the surface of the ground around a spring in the village.

RANGE. Niger bend region south of the Niger River between Mopti and Gao, Mali. Sanga and Bandiagara are on the Bandiagara Plateau about 75 miles east of Mopti. Hombori is 120 miles northeast of Sanga on the road to Gao.

DISCUSSION. The seven specimens from Hombori have a lower mid-body scale row count (46, 48, 50, 50, 51, 52, 52) than those from Sanga and Bandiagara which all have a count of 52–54. All specimens have two pairs of chin shields, but in some the second pair is much smaller than the first. In seven specimens the entire ventral region is white. Only two paratypes have original tails. Regenerated tails lack crossbars.

*Tropiocolotes tripolitanus apoklomax* seems to be most closely
related to *T. tripolitanus tripolitanus* which has chin shields and a mid-body scale count of 42–48. Geographically, however, *T. tripolitanus apoklomax* is separated from *T. tripolitanus tripolitanus* of Niger, Tunisia, Libya, and Egypt by *T. tripolitanus algericus* which is found in the Hoggar Mountains of the central Sahara approximately 700 miles northeast of Hombori. The type of *Tropiocolotes tripolitanus algericus* lacks chin shields and has 44 mid-body scale rows. *Tropiocolotes tripolitanus occidentalisis* with no chin shields and 40–41 mid-body scale rows occurs in Spanish Sahara and adjacent Mauritania, some 950 miles northwest of Sanga.

The name "apoklomax" (Greek: "from a stony place") refers to the habitat of this gecko.

**Chamaeleo africanus** Laurenti.


**Remarks.** According to Dunger (1966, p. 62) *C. africanus* is common throughout northern Nigeria. The two Nigerian specimens examined, collected by Dr. Edward Ross and Ken Lorenzen of the Department of Entomology, California Academy of Sciences, are from localities in the northeastern part of the country near the Niger and Chad borders. The specimens from Bandiagara were found walking on the ground. The Mopti individual, the only male, was found dead on the road. At Doentza this species is very common in trees in the town. The four lizards were brought in within a period of an hour by children who knocked them out of trees with sticks. Chamaeleons are thought to be poisonous at Doentza and the children were amazed to see us handle them. A single female, from Doentza, contained eggs.

In West Africa, *C. basiliscus* is found in the arid savanna and sub-desert regions. It has been collected at Tombouctou and in the Air Mountains. It probably occurs together with *C. senegalensis*, the common chameleon of the West African savanna. *C. senegalensis* has been taken at Gao (Angel and Lhote, 1938).
Chalcides thierryi Tornier.

**Material.** NIGERIA: CAS 104553, 6 miles S. of Jos (1250 m.), September 16, 1966, collected by E. S. Ross and K. Lorenzen.

**Remarks.** *Chalcides bottegi thierryi* was described by Tornier (1901, p. 87) from two specimens collected at Mangu and Jendi in German Togo (presently Sansanne Mango, Togo and Yendi, Ghana). Neumann (1905, p. 401) regarded *C. thierryi* as a good species, differing from *C. bottegi* of the Somalia Region in having a uniform body coloration, only 20 mid-body scale rows, and a much longer tail. E. G. Boulenger (1920, pp. 79–80) treated *C. bottegi* as a subspecies of *C. ocellatus* and pointed out that *C. thierryi* differs from *C. ocellatus bottegi* in having shorter and less unequal toes, a large ear opening, and a long thick tail. Boulenger also synonymized *C. pulchellus* with *C. thierryi*. *C. pulchellus* was described by Moequard (1906, p. 465) from a single specimen from Lobi District, French Sudan. This lizard differs from other specimens of *C. thierryi* in having numerous black flecks on the body and 24 mid-body scale rows. Loveridge (1936, p. 74) reports on a specimen (as *C. bottegi thierryi*) from Marama, Nigeria, and states that it agrees with Tornier’s description.

CAS 104553: Total length 295 (134 + 161) mm. Mid-body scale rows 20. Two median rows of dorsal scales enlarged. Uniform brown body coloration. Ocelli on tail only.

Mabuya perrotetti (Duméril and Bibron).


**Remarks.** Three of the specimens are juveniles (S.V. 48, 53, and 55 mm.). The fourth is an adult (S.V. 128 mm.). The juveniles all have unicarinate subdigital lamellae. Otherwise they agree with other descriptions of *M. perrotetti* (Boulenger, 1887, pp. 168–169; Schmidt, 1917, pp. 540–545). Schmidt (p. 543) states that in one specimen out of 27 collected in the Congo the subdigital lamellae are distinctly keeled and in others they are faintly keeled. In life the juveniles did not have the brilliant orange flanks that are characteristic of adults of the species, but were colored brown.
The juveniles were found under rocks at the edge of the town. The adult was found dead on the surface of the ground.

**Mabuya quinquetaeniata scharica** Sternfeld.


**Remarks.** The two specimens from near Gao are females. In the series of 20 from Bandiagara there are only two adult males. Adult males have a uniform brown dorsal coloration and a black throat. Females and young have a striped dorsal pattern and a light-colored throat. Very young specimens have a bright blue tail in life. Near Gao these lizards were common running about clumps of scrub palm along the Niger River. At Kidal this species was seen but not collected around rock walls in an irrigated date grove; however, none was seen elsewhere in the Adrar des Iforas. On the Bandiagara Plateau, *M. quinquetaeniata* was the most abundant diurnal lizard.

**Scincopus fasciatus** (Peters).

**Material.** (1) NIGERIA: CAS 102806, Sokoto, April 1958, collector unknown.

**Remarks.** This specimen and others from the same locality in the collection of the Los Angeles County Museum extend the range of *S. fasciatus* some three hundred miles south from Agadez, Niger (Angel, 1950). This species has been thought to occur only in the desert regions of North Africa. However, the specimens from Sokoto establish its presence at least as far south as the savanna of northern Nigeria.

**Sphenops delislei** (Latase).


**Remarks.** Pasteur and Bons (1960) removed this species, and several others, from the genus *Chalcides*. Apparently this species occurs along the southern edge of the Sahara from the Atlantic to the Red Sea. The type is from Senegambia and it has been collected at Agadez (Angel, 1950, p. 335) and Suakin,
Sudan on the Red Sea (Loveridge, 1936, p. 74). *Sphenops delislei* is easily separated from other species by the tridactyl fore limbs and tetradactyl hind limbs.

**Table 4. Measurements and counts for specimens of Sphenops delislei.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Sex</th>
<th>s.v. (mm)</th>
<th>Mid-body scale rows</th>
</tr>
</thead>
<tbody>
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<td>M</td>
<td>66</td>
<td>24</td>
</tr>
<tr>
<td>CAS 103228</td>
<td>M</td>
<td>83</td>
<td>24</td>
</tr>
<tr>
<td>CAS 103229</td>
<td>M</td>
<td>65</td>
<td>24</td>
</tr>
<tr>
<td>CAS 103230</td>
<td>F</td>
<td>85</td>
<td>24</td>
</tr>
<tr>
<td>CAS 103231</td>
<td>F</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>CAS 103232</td>
<td>M</td>
<td>69</td>
<td>24</td>
</tr>
<tr>
<td>CAS 103233</td>
<td>M</td>
<td>66</td>
<td>24</td>
</tr>
<tr>
<td>CAS 103234</td>
<td>M</td>
<td>91</td>
<td>24</td>
</tr>
<tr>
<td>MVZ 81431</td>
<td>M</td>
<td>72</td>
<td>24</td>
</tr>
<tr>
<td>MVZ 81432</td>
<td>F</td>
<td>75</td>
<td>24</td>
</tr>
</tbody>
</table>

All the lizards were taken within an hour in the village of Hombori. All were under rocks, either on the surface of the sand under the rocks, or uncovered by raking through the sand under the rocks. The lizards were very active and some escaped by “swimming” through the sand. Stomachs examined contained the adults and larvae of small beetles.

**Acanthodactylus boskianus asper** (Audouin).


**Remarks.** The species is found throughout North Africa. Angel and Lhote (1938) report on a specimen from Segou, Mali and another from the Hoggar, southern Algeria. These two localities are approximately 1100 miles apart. A straight line running between the two would pass through Gao, some 500 miles NE. of Segou. Dunger (1967b) reports on specimens from northern Nigeria.

The specimens range from 38–63 mm. s.v. Smaller specimens show six distinct light dorsal stripes. These are gradually lost with increase in size, until in large individuals the entire dorsal pattern is checkered, with only the most lateral stripe on each side distinct.

All specimens were shot with 22-dust shot in about an hour’s
time in the late afternoon. The lizards were active in and around thicket of scrub palm growing in loose sand a few hundred feet from the edge of the Niger River. *Mabuya quinquetaeniata* was equally common. A single specimen of *Latastia longicaudata* was collected along with the *Acanthodactylus*. Several 3- to 4-foot brown snakes, probably *Psammophis sibilans*, were seen in palm thickets, but escaped.

**Ememias guineensis** Boulenger.

**Material.** (1) NIGER: CAS 103274, 10 miles NW, of Tapoa on road to Tamou, December 26, 1965. Tapoa is a camp in Pare Nationaux Du W, a game reserve in the extreme southwestern part of Niger Republic.

**Remarks.** Until recently this species was known only from the type specimen supposedly collected at Brass, mouth of the Niger. This locality in coastal Nigeria is within the rain forest. Schmidt (1919, p. 511) regards its occurrence there as accidental, as *Eremias* is a savanna or desert genus. The present specimen was obtained in the dry savanna some seven hundred miles to the northwest of the mouth of the Niger. Dunger (1967b, pp. 122–123) reports that *E. guineensis* is common on the Jos Plateau in northe-central Nigeria. Dunger's description of Nigerian material agrees with Boulenger's description of the type and with CAS 103274.

Monard (1949, pp. 737–741) described *Eremias* (*Taenihermesia*) *benuensis* from seven specimens collected at Ngaouyanga and Bangouvé, northern Cameroun as the second species of the West African subgenus *Taenihermesia*. A comparison of CAS 103274 with Monard's description of *E. benuensis* and a description of *E. guineensis* given by Boulenger (1921, pp. 256–257) shows that the specimen from Niger is intermediate in several of the characters used by Monard to distinguish his new species from *E. guineensis* (see table 5). Therefore it seems best to consider *E. guineensis* a single species known presently to range from Niger to northern Cameroun.

The specimen was collected in a sandy wash in an area of dry savanna. No other lizards were seen during a two hour stop at the locality.
Table 5. Comparison of E. guineensis Boulenger and E. benuensis Monard.

<table>
<thead>
<tr>
<th>Character</th>
<th>CAS 103247</th>
<th>E. benuensis</th>
<th>E. guineensis</th>
</tr>
</thead>
<tbody>
<tr>
<td>head length (mm.)</td>
<td>10.5</td>
<td>9–14</td>
<td>7</td>
</tr>
<tr>
<td>s.v. (mm.)</td>
<td>42</td>
<td>32–58</td>
<td>24</td>
</tr>
<tr>
<td>s.v./head length</td>
<td>4</td>
<td>3.5–4.5</td>
<td>3.5</td>
</tr>
<tr>
<td>head width</td>
<td>6.0</td>
<td>?</td>
<td>4</td>
</tr>
<tr>
<td>head length/ head width</td>
<td>1.75</td>
<td>2</td>
<td>1.75</td>
</tr>
<tr>
<td>hind leg (mm.)</td>
<td>24.5</td>
<td>?</td>
<td>13</td>
</tr>
<tr>
<td>hind leg reaches</td>
<td>midway ear and shoulder</td>
<td>shoulder ear</td>
<td></td>
</tr>
<tr>
<td>frontal</td>
<td>as long as dist. from rostral</td>
<td>as long as dist. from rostral</td>
<td>as long as dist. from end of snout</td>
</tr>
<tr>
<td>supraciliaries</td>
<td>4 + 5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>granules between</td>
<td>2</td>
<td>2–3</td>
<td>1</td>
</tr>
<tr>
<td>supraoculars and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>supraciliaries</td>
<td>posterior nasal</td>
<td>⅔ size of inferior</td>
<td>posterior as large as inferior</td>
</tr>
<tr>
<td>white body lines</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>dorsal scale rows</td>
<td>50</td>
<td>50–64</td>
<td>60</td>
</tr>
<tr>
<td>ventral plate rows</td>
<td>8</td>
<td>10</td>
<td>10 (6–10 in Dunger’s sample)</td>
</tr>
<tr>
<td>femoral pores</td>
<td>19</td>
<td>18–20</td>
<td>21</td>
</tr>
</tbody>
</table>

Eremias rubropunctata (Lichtenstein).

Material. (1) MALI: CAS 103245, Kidal Road, 40 miles NE. of Anefis, December 18, 1965. This locality is at the southern edge of the Adrar des Iforas in northeastern Mali.

Remarks. This species is reported from the Adrar des Iforas (Angel and Lhote, 1938). It is found throughout North Africa from Morocco to Israel and in the Algerian Sahara. Of 47 specimens examined by Boulenger (1921, p. 279), eight had the nasals in contact. Of these eight, five were from Algerian Sahara localities nearest to the Adrar specimen, which also has nasals in contact. Boulenger’s specimens had 53–67 scales across the
middle of the body; in the Adrar specimen there are only 50. In this respect it is more like the similar *E. guttulata*, which has a 36–54 range of scale rows. However, all specimens of *E. guttulata* reported on by Boulenger and examined by me have eight to ten longitudinal rows of ventral plates, while the Adrar specimen has 12. Boulenger’s specimens of *E. rubropunctata* have 10–14 longitudinal rows of ventral plates, with 43 of 47 specimens having 12.

The specimen was collected as it ran under a small bush along the road. At this point the road crossed a half mile-wide, hard, gravel pan. No other lizards were seen here during a half hour stop.

*Latastia longicaudata longicaudata* (Reuss).


*Remarks.* This lizard has not been collected in the Sahara Desert, but occurs in the savanna and sub-desert regions across the whole of Africa bordering on the Sahara from Senegal to Sudan. This single specimen was collected along with a series of *Acanthodactylus boskianus asper*. In the field the whole series appears to be *Acanthodactylus*, and its identity remained unknown until the series was examined in preparation for this paper.

*Agama agama* (Linnaeus).


*Remarks.* At Bandiagara and near Anefis these lizards were common on rocky outcrops. At Tombouctou *A. agama* was found on the walls of buildings at the edge of the town.

*Agama sankaranica* Chabanaud.

*Material.* (2) MALI: CAS 103226, Bandiagara, December 6, 1965; MVZ 81398; Kidal Road, 40 miles NE. of Anefis, December 17, 1965.
Remarks. This species of Agama is much less common than A. agama. The two specimens were found in open, flat areas. The specimen from near Anefis extends the range of A. sankaranica some three hundred miles to the north.

Uromastyx geyri Müller.

Material. (2) MALI: CAS 103072–73, Kidal Road, 40 miles NE. of Anefis, December 17, 1965.

Remarks. Müller (1922) described U. geyri from the Hoggar region of the central Sahara. Andersson (1935) reported on five specimens of U. geyri from the Hoggar and the Adrar des Iforas and a single specimen of U. acanthinurus from Tin-Saouaten (Ti-N-Zaouatene), Adrar des Iforas. Andersson distinguished the two species by the number of tail verticils (21–22 in U. geyri; 17 in U. acanthinurus), length of tail (44–48 percent of total length in U. geyri; 35–38 percent in U. acanthinurus), the shape of the tail (narrower at the middle than at the base in U. geyri; uniform width nearly to the tip in U. acanthinurus), patches of enlarged scales on the flanks (present in U. geyri; absent in U. acanthinurus), and size of the dorsal scales (smaller in U. acanthinurus than in U. geyri).

Angel and Lhote (1938) listed U. acanthinurus from a number of localities in the Sahara and the subdesert, including the Hoggar and the Adrar des Iforas. However, no mention was made of U. geyri. Angel (1950) reported on U. acanthinurus from the Aïr region of Niger and again listed various other localities, but did not mention U. geyri. Pasteur and Bons (1960) regarded U. geyri and U. acanthinurus as distinct species and stated that Angel and Lhote (1938) and Angel (1944, 1950) overlooked the fact that two species of Uromastyx are found in the central and southern Sahara. Neither Angel nor Lhote gave specimen numbers or descriptions of their specimens so both species may be represented in their collections. Mertens (1962) reduced U. geyri to a subspecies of U. acanthinurus, but overlooked characters distinguishing the two forms. Table 6 compares the two specimens of U. geyri (CAS 103072–73) with four of U. acanthinurus (CAS 91526–29) from Morocco: Dra Inferieur.
Table 6. Comparison of specimens of Uromastyx geyri (103072-73) and Uromastyx acanthinurus (91526-29).

<table>
<thead>
<tr>
<th>CAS no.</th>
<th>s.v. (mm.)</th>
<th>tail (mm.)</th>
<th>tail × 100</th>
<th>no. of verticils</th>
<th>tail width</th>
<th>4th vert.</th>
<th>12th vert.</th>
</tr>
</thead>
<tbody>
<tr>
<td>103072</td>
<td>165</td>
<td>132</td>
<td>80.0</td>
<td>22</td>
<td>31 mm.</td>
<td>19 mm.</td>
<td></td>
</tr>
<tr>
<td>103073</td>
<td>197</td>
<td>157</td>
<td>79.7</td>
<td>21</td>
<td>38 mm.</td>
<td>22 mm.</td>
<td></td>
</tr>
<tr>
<td>91526</td>
<td>133</td>
<td>86</td>
<td>64.5</td>
<td>20</td>
<td>23 mm.</td>
<td>21 mm.</td>
<td></td>
</tr>
<tr>
<td>91527</td>
<td>213</td>
<td>137</td>
<td>64.3</td>
<td>18</td>
<td>42 mm.</td>
<td>36 mm.</td>
<td></td>
</tr>
<tr>
<td>91528</td>
<td>123</td>
<td>81</td>
<td>65.9</td>
<td>20</td>
<td>20 mm.</td>
<td>16 mm.</td>
<td></td>
</tr>
<tr>
<td>91529</td>
<td>218</td>
<td>145</td>
<td>66.5</td>
<td>18</td>
<td>41 mm.</td>
<td>39 mm.</td>
<td></td>
</tr>
</tbody>
</table>

In cross section the tails of *U. geyri* are egg-shaped, whereas the tails of *U. acanthinurus* are greatly flattened. Only *U. geyri* have enlarged scales on the flanks.

The specimens of *U. geyri* were collected in rock outcrops. Even at midday no individuals were seen sunning. The two specimens obtained and several others that could not be caught were all found by looking in crevices in boulders several feet above the ground. The lizards were tightly wedged in the cracks and when disturbed they would inflate, making it impossible to extract them unless the rock was broken apart with a crowbar. These large lizards may not be active during December in the cool, dry season. The two specimens that were caught were sluggish when taken out of their retreats. However, another lizard did move several feet to another crevice. Its first crack was broken open until its leg and tail were exposed, but no amount of pulling would dislodge its inflated body. On returning to the rock the next day, we discovered that the animal had abandoned its nearly destroyed home, and was now deep in another crack several feet away.

*Leptotyphlops macrorhynchus* (Jan).


Remarks. This species is found from the Indus Valley of India through the Middle East, across North Africa to Morocco, and south into West Africa to Ghana. Apparently it has not previously been reported from Mali; however it is known from Mauritania, Guinea, and Niger which border on Mali. The speci-
men was found under cattle droppings. Color in life deep pink. Total length 205 (191 + 14) mm.

**Leptotyphlops narirostris narirostris** (Peters).

**Material.** (1) NIGERIA: CAS 104555, 6 miles S. of Jos (1250 meters elevation), September 16, 1966, collected by E. S. Ross and K. Lorenzen.

**Remarks.** This subspecies is found in Nigeria, Ivory Coast, and Cameroun. To the north in Mauritania, Senegal, and Mali it is replaced by *Leptotyphlops narirostris boueti* (Chabanaud). Total length 126 (107 + 19) mm. The stomach contained some 50 ant eggs.

**Boaedon fuliginosus** (Boie).

**Material.** (1) UPPER VOLTA: MVZ 81441, 12 miles NW. of Ouagadougou, December 2, 1965.

**Remarks.** The specimen was collected as it crawled across a road during the late afternoon.

**Psammophis elegans** (Shaw).

**Material.** (1) MALI: CAS 103194, Bandiagara, December 6, 1965.

**Remarks.** *Psammophis elegans* is a common diurnal snake in the open country of West Africa. It is found from the edge of the Sahara in Senegal and Mali to the coast in Ghana and Nigeria. The specimen from Bandiagara was collected during mid-morning as it was crawling among rocks.

**Psammophis sibilans sibilans** (Linnaeus).

**Material.** (2) MALI: MVZ 75477, Bandiagara, December 13, 1961; CAS 103195, Bandiagara, December 6, 1965.

**Remarks.** This form is widespread throughout Africa. In the north it is found along the Nile to the Delta and in the Sahara of southern Algeria. It occurs all through tropical Africa except for the rain forest where it is replaced by *P. sibilans phillipsi*. MVZ 75477 was found under a trash pile early in the morning. CAS 103195 was active on the surface of the ground during midmorning.
Telescopus variegatus (Reinhardt).


Remarks. This species is apparently restricted to the savanna and semiarid regions of West Africa from Guinea to northern Cameroun. It penetrates the southern Sahara at least in the Air Mountains of Niger where the more desert-dwelling T. tri-politanus is found. The specimen was found at night crossing a road in a dry savanna area that had recently burned over.

Zoogeography

The reptiles found within the Mali Region have two origins. There are Palearctic desert forms that have moved into the area from the north, and tropical African forms that have moved into the area from the south. As would be expected, many of the Palearctic species are found only in the northern subdesert and desert zones of the study area, and many of the tropical African species are found only in the wetter savanna zones in the southern part of the study area. However, there are a number of species whose distributions are restricted to the savanna and subdesert zones and are neither found in the rain forest to the south nor in the Sahara Desert to the north. The origins of these species are both Palearctic and tropical African.

The present distributions of the species included in this paper can be divided into several patterns. Species are listed below according to pattern, and possible reasons for the distribution are discussed.

Species Throughout Africa South of the Sahara

Twenty-seven of the species that have been recorded from the Mali Region have distributions that are primarily throughout tropical Africa south of the Sahara. These are:

Agama agama
Hemidactylus brookii angulatus
Lygodactylus picturatus gutturalis
Varanus exanthematicus exanthematicus
Varanus niloticus niloticus
Typhlopis punctatus punctatus
Python sebae  
Boaedon fuliginosus  
Crotaphopeltis hotamboecia  
Dasypeltis scabra  
Dispholidus typus  
Dromophis lineatus  
Dromophis praecornatus  
Meizodon coronatus  
Natriciteres olivaceus  
Philothamnus irregularis  
Philothamnus semivariegatus  
Ramphiophis oxyrhynchus  
Psammophis sibilans  
Bitis arietans arietans  
Causus rhombeatus  
Naja haje haje  
Naja melanoleuca  
Naja nigricollis  
Trionyx triunguis  
Pelomedusa subrufa  
Crocodylus niloticus  

All of these species are of tropical African origin. Several occur in North Africa but have not been collected in the central part of the Sahara. Boaedon fuliginosus, Bitis arietans, and Naja haje are found in Morocco and probably reached North Africa during less severe climatic conditions along the Atlantic coast of Spanish Sahara. Even at the present time this coastal desert is not as extreme as in the interior. These three snakes are characteristic of savanna and semi-desert areas.

Dasypeltis scabra, Trionyx triunguis, and Crocodylus niloticus are found along the Nile River into Egypt. The Nile River provides a permanent, well-watered pathway from Tropical Africa to the Mediterranean Sea. The presence in historic times of Crocodylus niloticus in the Tassili des Ajjers of the central Sahara suggests that at one time either there was a water connection between the savanna and the desert or that the savanna extended much further north. Fresh water fish of a tropical origin are also found in the Tassili des Ajjers.

Most of the species in this group are not found north of the moister savanna zones. Such species as Dispholidus typus, Philo-
thamnus irregularis, and Philothamnus semivariegatus are arboreal and are not found north of wooded areas. Species such as Varanus niloticus, Python sebae, Crotaphopeltis hotamboeia, Causus rhombeatus, and Pelomedusa subrufa are restricted to areas where there is permanent water because of their physiological requirements or food. The Niger River provides such permanent water and enables these species to survive. Typhlops punctatus and Meizodon coronatus are burrowing snakes that live in soil and apparently cannot survive in sandy areas. Agama agama and Hemidactylus brookii are commonly found around habitats and part of their distribution may be due to man.

TROPICAL FORMS RESTRICTED TO WEST AFRICA FROM SENEGAL-GUINEA TO THE CAMEROUN-CONGO-CHAD AREA

Fourteen species, all of a tropical African origin, are restricted to West Africa and not found throughout east and southern Africa. These are:

Mabuya perrotetii
Mabuya quinquetaeniata
Chamaeleo senegalensis
Gonionotophis granti
Lycophidium irroratum
Lycophidium semicinctum
Mehelya crossi
Natrix anoscopus
Psammophis elegans
Telescopus variegatus
Atractaspis dahomeyensis
Atractaspis microlepidota microphis
Elapsoidea sundevallii moebiusi
Cyclanorbis senegalensis

Only Mayuba quinquetaeniata penetrates the Sahara Desert along the Nile River. Gonionotophis granti, Atractaspis dahomeyensis, Atractaspis microlepidota, and Elapsoidea sundevallii, are burrowing savanna snakes and have not been collected north of the Dry Savanna. A lack of suitable soil and the presence of sand north of the Dry Savanna is probably the barrier to their northern distribution. Chamaeleo senegalensis is arboreal and is found along the Niger River, but is not found
in the Wooded Steppe where the small leaved, deciduous *Acacia* trees do not provide sufficient protection from the sun. *Lycopodium semicinctum, L. irroratum, Mehelya crossii*, and *Natrix anoscopus* are snakes of the forest and tall grass savannas and are found only in the extreme southern part of the Mali Region. *Psammophilis elegans* and *Telescopus variegatus*, both lizard feeders, occur into the Subdesert Steppe where lizards are abundant. *Cyclanorbis senegalensis* is an aquatic turtle.

**SAVANNA AND SEMIDESERT FORMS FOUND ACROSS AFRICA NORTH OF THE RAIN FOREST AND SOUTH OF THE SAHARA FROM SENEGAL TO OR NEARLY TO THE RED SEA**

Nine species, both of Palearctic and tropical African origin, occur in a band across Africa north of the forest and south of the Sahara. The species of Palearctic origin include:

- *Tarentola annularis*
- *Tarentola ephippiata*
- *Sphenops delisiei*
- *Eryx colubrinus*

The species of probable African origin include:

- *Latasia longicaudata*
- *Chamaeleo africanus*
- *Python regius*
- *Prosymna meleagris laurenti*
- *Geochelone sulcata*

*Sphenops delisiei*, a burrowing skink, and *Eryx colubrinus* are found in areas where there is sand soil, but are not found in the extreme desert. The rock-dwelling gecko, *Tarentola annularis*, and the rock and tree-trunk dwelling *Tarentola ephippiata* are found in suitable habitats in all the zones of the study area and even in parts of the Sahara Desert. However, they appear to be absent from the central Sahara. *Tarentola annularis* is found along the Nile River to the Delta.

*Chamaeleo africanus* is restricted to savanna areas where there are trees, but can survive in regions where there is less rainfall than is needed for *C. senegalensis*. *Geochelone sulcata* is a tortoise found primarily in the Wooded Steppe. *Python regius* and *Prosymna meleagris* are both widely distributed in tall grass
savannas. *Lattastia longicaudata* is found throughout short grass and subdesert areas.

**SAVANNA AND SEMIDESERT FORMS FOUND ONLY IN WEST AFRICA**

Twelve species, both of Palearctic and tropical African origin, are found only in the savanna and semidesert parts of West Africa. The species of Palearctic origin are:

*Hemitheconyx caudicinctus*
*Chalcides thierryi*
*Eremias guineensis*
*Eremias nitida*
*Eryx muelleri*
*Coluber dorii*

The species of tropical African origin are:

*Cynisca leucura*
*Philochortus ibotei*
*Agama sankaranica*
*Leptotyphlops bicolor*
*Leptotyphlops brevicauda*
*Leptotyphlops narirostris boueti*

Both *Hemitheconyx caudicinctus* and *Chalcides thierryi* are found in rocky areas. Only a few specimens have been collected. *Eremias guineensis*, *s. nitida*, and *Agama sankaranica* are active, diurnal lizards found in open country. They have not been collected east of the northern Cameroun-Chad region. However, almost no collecting has been done between Chad and Somalia. Therefore the apparent restriction of these three species, and in fact of other species in this section, may be due to a lack of collecting.

*Coluber dorii*, the only member of the genus *Coluber* in tropical Africa, is rare in collections, and its distribution is not well understood. *Philochortus ibotei* is known only from the type locality. The center of the genus *Philochortus* is in the Ethiopia-Somalia region.

*Cynisca leucura*, *Leptotyphlops bicolor*, *L. brevicauda*, and *L. narirostris* are subterranean, termite- and ant-eating species. They are only occasionally found on the surface of the ground after a rain. They are absent from extensive sandy areas and
the sand of the Subdesert Steppe may limit their northward distribution.

**Forms of the Sahara Desert**

Nineteen species of reptiles, all of Palearctic origin, are found in the Sahara Desert, and do not extend into the Middle East. Some of the species are found south of the Sahara into the savanna. The species of a Saharan distribution are:

- *Stenodactylus petrii*
- *Stenodactylus sthenodactylus*
- *Tropiocolotes steudneri*
- *Tropiocolotes tripolitanus*
- *Scincopus fasciatus*
- *Scincus scincus*
- *Acanthodactylus scutellatus*
- *Acanthodactylus erythrurus bellii*
- *Eremias olivieri olivieri*
- *Eremias pasteuri*
- *Eremias rubropunctata*
- *Uromastyx acanthinurus*
- *Uromastyx geyri*
- *Agama bibroni*
- *Coluber florulentus algirus*
- *Lytorhynchus diadema*
- *Macroprotodon cucullatus cucullatus*
- *Telescopus tripolitanus*
- *Cerastes vipera*

These species are true desert forms. Only four of the species have been collected south of the Subdesert Steppe. *Stenodactylus sthenodactylus*, *Scincopus fasciatus*, and *Acanthodactylus erythrurus bellii* have been found in extreme northern Nigeria. *Tropiocolotes tripolitanus apoklomax* is found in rocky areas in the Wooded Steppe of Mali.

Within the Sahara some of the species like *Scincus scincus* and *Cerastes vipera* occur in areas of loose sand, some like *Uromastyx geyri* and *Agama bibroni* are found in rocky areas, and others like *Eremias rubropunctata* usually occur in open flat areas, but not among sand dunes.

All these species are found only as far east as the Red Sea.
and Israel. The Great Rift Valley of East Africa which extends north through the Red Sea and the Dead Sea at one time formed a sea barrier between Africa and the Middle East. The Nile River is not an effective barrier since many of the species are found east of the Nile in Sinai and Israel.

**Forms of the Middle East and the Sahara**

Fourteen species of reptiles, all of Palearctic origin, are found both in the Middle East and in the Sahara Desert. These include:

- *Phyodactylus hasselquistii*
- *Chalcides ocellatus*
- *Acanthodactylus boskianus asper*
- *Eremias guttulata guttulata*
- *Agama mutabilis*
- *Varanus griseus*
- *Leptotyphlops macrorhynchos*
- *Coluber rhodorachis rhodorachis*
- *Malpolon moilensis*
- *Psammophis schokari*
- *Spalerosophis diadema cliffordi*
- *Cerastes cerastes*
- *Echis carinatus pyramidum*
- *Clemmys caspica*

Four of these species are found south of the Subdesert Steppe in the savanna. *Phyodactylus hasselquistii* is found in rocky areas in all of the savanna zones. *Acanthodactylus boskianus asper* is found in Ghana and *Echis carinatus*, a widely ranging and adaptable viper, is found from India through the Sahara Desert and into all zones in West Africa except the forest.

The aquatic turtle, *Clemmys caspica*, absent from the central Sahara, is found in the Middle East, North Africa, and the Air Mountains and the Adrar des Iforas of the southern Sahara. It is possible that this species may have crossed the Sahara during wetter times, but it is also very likely that *Clemmys caspica* was introduced from North Africa by camel caravans. Agadez, the only specific locality for *Clemmys caspica*, was a major southern caravan terminus.

All of the species found both in Africa and the Middle East either were distributed before the Rift Valley separation, or
more likely, since there is little population variation, throughout their ranges, have more recently migrated into the Sahara.

CHECKLIST

This checklist contains 97 species and subspecies of reptiles that have been collected within the boundaries of the "Mali" study area. Within this region: one amphisbaenid, 41 lizards, 49 snakes, 5 turtles and tortoises, and 1 crocodilian are known to occur. The checklist includes the following: the current scientific name, reference to the type description, reference to current literature on the species, the geographic range, and localities within the study area where the species has been collected.

Except for localities where the author collected specimens, each locality is followed by a number. Each number refers to a literature reference listed below; the complete citation may be found in the bibliography at the end of this paper.

1. Andersson, 1935
2. Angel, 1922
3. de Witte, 1930
4. Angel, 1931
5. Angel, 1932
6. Angel, 1933
7. Angel, 1936a
8. Angel, 1936b
9. Angel, 1944
10. Angel, 1950
11. Angel and Lhote, 1938
12. Chabanaud, 1917a
13. Chabanaud, 1917b
14. Grandison, 1956
15. Hughes, Barry (Department of Zoology, University of Ghana; personal communication)
16. Loveridge, 1936
17. Pellegrin, 1909
18. Villiers, 1950b
19. Villiers, 1950a
20. Villiers, 1951
21. Villiers, 1952
22. Villiers, 1953
23. Villiers, 1954
24. Villiers, 1956
25. Villiers, 1965

Class **REPTILIA**

Order **AMPHISBAENIA**

Family **Amphisbaenidae**

Genus **Cynisca** Gray

*Cynisca leucura* (Duméril and Bibron).

REPTILES OF ARID WEST AFRICA — PAPENFUSS


**Range.** Liberia to Nigeria.

**Locality.** Bobo Dioulasso.

Order SQUAMATA

Family GEKKONIDAE

Genus _Hemithelconyx_ Stejneger

_Hemithelconyx caudicinctus_ (Duméril).


**Range.** West Africa from Senegal to northern Nigeria.

**Localities.** MALI: Kati near Bamakko (_Psilodactylus caudicinctus)_; Nioro. UPPER VOLTA: Dano.

Genus _Hemidactylus_ Oken

_Hemidactylus brookii angulatus_ (Hallowell).


**Range.** Most of tropical Africa south of the Sahara.

**Localities.** MALI Bourem; Donentza; Bamako, Daifarabé; Segou; Hombori. NIGER: Zinder; Tahoua; Matankari; UPPER VOLTA: Dano. NIGERIA: Argungu; Sokoto (Dungger, 1968).

Genus _Lygodactylus_ Gray

_Lygodactylus picturatus guttaralis_ (Bocage).


Range. Portuguese Guinea to Sudan; south to Tanzania.

Locality. UPPER VOLTA: Bobo Dioulasso⁹.

Genus Ptyodactylus Gray

Ptyodactylus hasselquistii (Donndorff).


Range. Savanna and desert regions of Africa north of 10°N: Middle East. The status of the subspecies P. h. oudrii Latasté in Morocco and Algeria and P. h. togoensis Tornier in Togo is unclear.

Localities. ALGERIA: Hogar (Hoggar)¹; Silet (Hoggar); Tassili de Timissao³; Imegha ou Imerera (Imarera), 2000 m. (Hoggar) (P. lobatus)⁴; Hoggar (P. lobatus)⁹; Tamrit; Djanet¹¹. MALI: Tin-Zaouaten (Ti-N-Zaouâtène), Adrar Mountains¹; Djénné (P. lobatus)¹³; Kidal Rd., 40 miles NE. Anefis (Anefis I-N-Darane), Adrar; Bandiagara; Hombori; 2 miles S. of Airport, Mopti; Sanga. NIGER: Agadez; Dabaga (Aïr); Irabellaben (Aïr); Téouar (Aïr)¹⁰; Agadez, Iferouâné; I-N-Gall¹¹; Agadez¹⁴. UPPER VOLTA: Fada Ngourma.

Genus Stenodactylus Fitzinger

Stenodactylus petrii Anderson.

Stenodactylus petrii ANDERSON, 1896, Contr. Herp. Arabia, p. 96 (type locality: Tel el Amarna, Assuit Province, Egypt).

Range. Desert regions of North Africa and Near East from Algeria to Israel.

Localities. MALI: 42 miles N. of Bourem. NIGER: Agadez, Téouar (Aïr)¹⁰.

Stenodactylus sthenodactylus (Lichtenstein).


Range. Desert regions of North Africa from Morocco and Mauritania to Egypt. Extends into northern Nigeria, the Sudan, and northern Kenya.


Genus Tarentola Gray

Tarentola annularis (Geoffroy).


Range. Mauritania and Senegal to Egypt and Somalia.

Localities. Tarentola annularis and T. ephippiata have been confused in West Africa. Only localities definitely referable to T. annularis are listed. Mali: Goundam (T. senegalensis)⁶; Bandiagara; Elequit (El Ouit); Gao; Timbuctu (Tombouctou); 2 miles S. of Airport, Mopti.

Tarentola ephippiata O’Shaughnessy.


Range. Senegal to Chad. Absent from Nile River region. Saukin (Red Sea).

Localities. Mali: Gao; Hombori; Timbuctu (Tombouctou); Niger: Agadez; Azzel (Aïr).

Genus Tropiocolotes Peters

Tropiocolotes steudneri (Peters).


**Range.** Desert regions of North Africa from Algeria to Egypt and Sudan.

**Locality.** ALGERIA: Amguid\(^1\).

*Tropicolotes tripolitanus algericus* Loveridge.


**Range.** Algerian Sahara.

**Locality.** Ahaggar (Hoggar Mountains) (Loveridge, 1947, p. 57).

*Tropicolotes tripolitanus tripolitanus* Peters.


**Range.** Egypt west to Tunisia and Niger.

**Localities.** NIGER: Azzel (Air Sud); Dabaga (Air); Téouar (Air Central)\(^10\).

Family **Scincidae**

Genus **Chalcides** Laurenti

*Chalcides ocellatus* (Forskål).


**Range.** North Africa, Southern Europe, Middle East.

**Localities.** The taxonomy of the subspecies in the Sahara is not clear. Three forms have been reported from the mountain masses of the Sahara. ALGERIA: Hoggar (Hoggar)\(^1\); Hoggar (*C. ocellatus tiligugu*)\(^9\); Djanet (*C. ocellatus tiligugu*)\(^11\); Djanet; Tamrit (*C. ocellatus tassiliensis*)\(^11\). NIGER: Azzel (Air); Ira-bellaben (Air) (*C. ocellatus ocellatus*)\(^10\); Oued Goufat (Air) (*C. ocellatus tiligugu*)\(^11\).
Reptiles of Arid West Africa — Papenfuss

**Chalcides thierryi** Tornier.


**Range.** Rocky regions in the savanna from Upper Volta to Nigeria.


**Genus Mabuya** Fitzinger

*Mabuya perrotetii* (Duméril and Bibron).


**Range.** Senegal to Congo.

**Localities.** MALI: Diafarabé; Séguo\(^\text{14}\); Bandiagara. UPPER VOLTA: Fada Ngourma\(^\text{10}\).

*Mabuya quinquetaeniata scharica* Sternfeld.


**Range.** West Africa from Senegal to the Ubangi-Shari region.

**Localities.** MALI: Burem (Bourem)\(^\text{1}\); Kati near Bamakko\(^\text{2}\); Goundam\(^\text{6}\); Ansongo; Ménaka; Séguo\(^\text{11}\); Gao; Tombouctou\(^\text{13}\); Gao (*M. intermedia*)\(^\text{13}\); Koulikoro\(^\text{14}\); Bandiagara; 12 miles S. of Gao. NIGER: Dungass (Dungas); Matankari; Zinder\(^\text{17}\).

**Genus Scincus** Laurenti

*Scincus scincus* (Linnaeus).

*Lacerta stincus* Linnaeus, 1758, Syst. Nat., p. 205 (type locality: Libya, Egypt, Arabia) (*stincus* typographical error corrected to *scincus*).

Range. Morocco to Syria. In West Africa south to desert regions of Mauritania, Mali, and Niger.

Localities. Algeria: Hoggar (S. officinalis); Djanet; Oued Iminrou (S. officinalis). Mali: Tombouctou (S. muscatensis); Adrar des Iforas (S. officinalis). Niger: Bilma (S. officinalis).

Genus Scincopus Peters

Scincopus fasciatus Peters.

Range. Mauritania to Egypt and Sudan. South to Northern Nigeria.


Genus Sphenops Wagler

Sphenops delislei (Lataste).
Alloactylus de l’Isleii Lataste, 1876, Journ. Zool., p. 238, pl. x (type locality: Japan).


Range. Sub-Sahara regions from Senegal to the Red Sea. Hoggar Mountains of the Central Sahara. The type locality, Japan, is in error.

Family Lacertidae

Genus Acanthodactylus Wiegmann

Acanthodactylus boskianus asper (Audouin).


Localities. ALGERIA: Hogar (Hoggar)\(^1\); Tamanrasset\(^3\); In Ameri (Hoggar); Imegha (Imarera); Ararne (Tefedest); Tazerouk\(^4\); Hoggar\(^6\); Amguid; Djanel; Azaka Emire; Assakao\(^11\). MALI: Segou\(^11\); 12 miles S. of Gao. NIGER: Agadez\(^10\). NIGERIA: Illela; Kware; Sokoto-Kware road (Dunger, 1967b, p. 126).

Acanthodactylus erythrurus bellii Gray.
*Acanthodactylus Bellii* Gray, 1845, Cat. Lîz. British Mus., p. 36 (type locality: Algiers).

Range. Morocco, Algeria, Northern Nigeria.

Locality. NIGERIA: Sokoto (*A. vulgaris*)\(^17\).

Acanthodactylus scutellatus (Audouin).

Range. Desert regions of North Africa. Israel. More than one subspecies may occur in the Southern Sahara.

Localities. ALGERIA: Tassili de Timissao\(^3\); Amguid; Erg d’Admer; oued Rofat\(^11\). MALI: Timétrine; Tisserlitine\(^3\); Goundam; Mbouna\(^6\).
Genus *Eremias* Fitzinger

**Eremias guineensis** Boulenger.


**Ranger.** Savanna of Niger, Nigeria, and Cameroun.

**Locality.** NIGER: 10 miles NW. of Tapoa on road to Tamou.

**Eremias guttulata guttulata** (Lichtenstein).


**Range.** Desert regions of North Africa. Middle East to Iraq.

**Localities.** ALGERIA: Hoggar⁹; Adrar In Gechika; Amguid; Hamada de Tim Gechika¹¹. NIGER: Agadez; Taferjit (Tafersit)¹¹.

**Eremias nitida** Günther.


**Range.** Savanna of West Africa from Guinea to Cameroun.

**Locality.** NIGERIA: Rimi (Dunger, 1967b, p. 125).

**Eremias olivieri olivieri** (Audouin).


*Eremias olivieri olivieri*, PASTEUR AND BONS, Travaux Inst. Sci. Chérifien,
ser. Zool., no. 21, pp. 64–67 (recognizes *E. guttulata* and *E. olivieri* as separate species).

**Range.** Desert regions of North Africa. Israel.

**Localities.** ALGERIA: Hoggar⁹; Amguid¹¹.

**Eremias pasteuri** Bons.


**Range.** Sahara Desert of extreme southern Morocco, central Algeria and northern Niger.


**Eremias rubropunctata** (Lichtenstein).


**Range.** Desert regions of North Africa.

**Localities.** ALGERIA: Arak¹; Tanezrouft (250 kilometers S. of Reggan)⁸; Hoggar⁸; Amguid; Isolane (Issalane)¹¹. MALI: Tanezrouft; Région de Soumfat (Tessounfat)⁸; 40 miles NE. of Anefis. NIGER: Jadel (Jadal)¹¹.

**Genus Latastia** Bedriaga

**Latastia longicaudata longicaudata** Reuss.

*Lacerta longicaudata* REUSS, 1834, Mus. Senckenb., vol. 1, p. 29 (type locality: Tor, Sinnatig Peninsula).


**Range.** Savanna and sub-desert regions from Senegal to the Red Sea.

**Localities.** MALI: Goundam⁸; 12 miles S. of Gao. NIGER: Azzel (Air); Dabaga (Air); Téouar (Air)¹⁰; Dungas⁴⁷. NI-
GERIA: Illela; Kalgo; Kware-Sokoto road; Sokoto (Dunger, 1957b, p. 128).

Genus _Philochortus_ Matschie

**Philochortus lhotei** Angel.


**Range.** Known only from the type locality.

**Locality.** _Niger_: Puits d'In Abezou, 100 kilometers southwest of Puits d'In Abangarit (I-N-Abanrherit).

**Philochortus spinalis** (Peters).

_Lacerta spinalis_ Peters, 1874, Mon. Ak. Berlin, p. 369, pl. fig. 2 (type locality: Bogos).


**Range.** Eritrea, Ethiopia [to Mali (?)].

**Locality.** _Mali_: Burem (Bourem). This specimen from a locality some 2500 miles west of Ethiopia may not be _P. spinalis_. However, Andersson (1935, p. 14) states that it agrees in every detail with Peters' description.

Family **Agamidae**

Genus _Agama_ Daudin

**Agama agama** (Linnaeus).

_Lacerta agama_ Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 207 (type locality: America (in error)).


**Range.** Throughout Africa south of the Sahara and Egypt. The subspecific status of West African material is not clear.

**Localities.** _Algeria_: Djanet; Tamrit (may be misidentified specimens of _A. impalearis_11. _Mali_: Kati near Bamako (_A. colonorum_2; Gundram (_A. colonorum_4; Douentza12; Diafarabé; Nioro, Séguo14; Bandiagara; Tombouctou; Kidal Road, 40 miles
NE. of Anefis. NIGER: Téouar; Monts Baguezans (Aïr); Agadez; Aoudéras (Aïr); Aïr; Dungas; Zinder (A. colonomum).

Agama impalearis Boettger.


**Range.** Morocco, Algeria, Tunisia, Mali, Niger.

**Localities.** ALGERIA: Mont Ilaman (Hoggar); Tassili de Timissao; Imegha; Hoggar. MALI: Between Tisserlitine and Timetrine. NIGER: In Abezou (100 kilometers SW. of I-N-Abanrherit).

Agama mutabilis Merrem.

*Agama mutabilis* Merrem, 1820, Tent. Syst. Amphib., p. 50 (type locality: Egypt).

*Agama mutabilis*, Pasteur and Bons, 1960, Travaux Inst. Sci. Chérifien, ser. Zool., no. 21, pp. 35–42 (*A. inermis* Reuss, 1834, a synonym for *A. mutabilis* Merrem, 1820; *A. pallida* and *A. mutabilis* are conspecific; *A. ruderata* and *A. mutabilis* are distinct).

**Range.** Desert and sub-desert regions of northern Africa.

**Localities.** ALGERIA: Hogar (Hoggar); Oued Ahetes (Teffedest) (*A. inermis*); Hoggar; Tassili de Timissao (*A. inermis*); Tékébrine; Todock. MALI: Tanezrouft; Timetrine; Tisserlitine (*A. inermis*). NIGER: Adrar Sederog (Sederor); Adrar Tazerzait (Tazerzaït, Mont); Bilma (*A. pallida*).

Agama sankaranica Chabanaud.


**Range.** Portuguese Guinea to Nigeria.

**Localities.** MALI: Ségou; Bandiagara; Kidal Road, 40 miles NE. of Anefis.
Genus **Uromastyx** Merrem

**Uromastyx acanthinurus** Bell.


**Range.** Desert and semi-desert regions of North Africa from Morocco and Senegal to Egypt and Sudan.

**Localities.** ALGERIA: Hoggar²; Oued Ahetes (Tefedest)⁴; Hoggar⁹. MALI: Tin-Saouaten (Ti-N-Zaouâtene)¹; Tanezrouft; Timétrine³. NIGER: Agadez; Téouar (Aîr) ¹⁰.

**Uromastyx geyri** Müller.


**Range.** Mountains of the central and southern Sahara, including Tassili des Ajjers, Hoggar, Air, and Adrar des Iforas.

**Localities.** ALGERIA: Hogar (Hoggar)¹. MALI: Adrar Mountains (Adrar des Iforas)¹; Kidal Road, 40 miles NE. of Anefis. Some of the localities given for *U. acanthinurus* may be for *U. geyri*.

**Family Varanidae**

Genus **Varanus** Merrem

**Varanus exanthematicus exanthematicus** (Bosc).


**Range.** Senegal to Eritrea; south to the rain forest.

**Localities.** MALI: Kidal¹; Kati near Bamakko²; Goundam⁶; Tombouctou¹³. NIGERIA: Kware (Dunger, 1967c, p. 174).
**Reptiles of Arid West Africa — Papenfuss**

**Varanus griseus griseus** (Daudin).

Range. North Africa. Other subspecies in Southwest Asia and India.

**Localities.** ALGERIA: Hoggar⁹. MALI: Adrar des Iforas¹¹. NIGER: Aïr; puits d'Assaouas¹¹.

**Varanus niloticus niloticus** (Linnaeus).

Range. Africa south of the Sahara.

**Localities.** MALI: Burem (Bourem); Adrar Mountains (Adrar des Iforas)¹. NIGER: Tapoa (sight record by author).

**Family Chamaeleonidae**

**Genus Chamaeleo** Laurenti

**Chamaeleo africanus** Laurenti.
*Chamaeleo africanus* LAURENTI, 1768, Synops. Rept., p. 46 (type locality: not given).
*Chamaeleo africanus*, MERTENS, 1966, Das Tierreich: Chamaeleonidae, Lief. 85, pp. 6–7 (synonymy).

Range. Savanna from Mali to Somalia.

**Localities.** MALI: Diafarabé (*C. basiliscus*)⁹; Tombouctou (*C. basiliscus*)¹¹; Gourao; Mopti; Route Mopti to Bandiagara; Ségou¹⁴; Bandiagara; Doentza; 6 miles E. of Mopti. NIGER: Agadez; Téouar (Aïr) (*C. basiliscus*)¹⁰; Dungas (*C. basiliscus*)¹⁷. NIGERIA: Illela; Kalgo; Katsina; Kware; Rimi (*C. basiliscus*) (Dunger, 1967a, p. 62).
Chamaeleo senegalensis senegalensis Daudin.


*Chamaeleo senegalensis senegalensis* MERTENS, 1966, Das Tierreich: Chamaeleonidae, Lief. 83, p. 27 (synonymy).


**Range.** Senegal to Cameroun.

**Localities.** MALI: Gao; Baoulé; Koulikoro.

Order SERPENTES

Family LEPTOTYPHLOPIDAE

Genus *Leptotyphlops* Fitzinger

*Leptotyphlops bicolor* (Jan).

*Stenostoma bicolor* JAN, 1860, Icon. Gen., vol. 1, pl. 5, fig. 15 and 1864, Les Typhlopiens, p. 40 (type locality: Gold Coast).


**Range.** Ivory Coast and Mali to Dahomey.

**Localities.** MALI: Diafarabé. UPPER VOLTA: Bobo Dioulasso; Garango.

*Leptotyphlops brevicauda* (Bocage).


**Range.** Ivory Coast and Mali to Nigeria.

**Localities.** GHANA: Bawku. MALI: Bamako.

*Leptotyphlops macrorhynchus* (Jan).


**Range.** Africa from Ghana to Sudan. Middle East. India.
LOCALITIES. MALI: Vicinity E. of Bourem. NIGER: Bilma; Agadez; Bilma; Agadez; Téouar (Air).

Leptotyphlops narirostris boueti (Chabanaud).


Range. Mauritania, Senegal, Mali.

Localities. MALI: Djenné; Bamako. MAURITANIA: Aioun-el-Atrouss.

Family TYPHLOPIDAE

Genus Typhlops Schneider

Typhlops punctatus punctatus (Leach).

Acontias punctatus LEACH, 1819, in Bowdich, Miss. Ashantee, App., p. 493 (type locality: Fante (Fanti, Ashanti, Ghana)).


Range. Senegal to Sudan. South to Uganda.

Localities. MALI: Diafarabé. NIGER: Birni Nkonni (T. punctatus var. nigro-lineata).

Family BOIDAE

Genus Eryx Daudin

Eryx colubrinus (Linnaeus).


Range. Niger east to Egypt, Sudan and Kenya.

Localities. Agadez; Tabaello (Air).
Eryx muelleri (Boulenger).


Range. Savanna and semi-desert regions of West Africa.

Localities. MALI: Bandiagara; Gao; Nioro; Dogo.

Genus Python Daudin

Python regius (Shaw).


Range. Senegal to Sudan. South to Nigeria. Absent from the rain forest.

Locality. GHANA: Navrongo.

Python sebae (Gmelin).

Coluber Sebae Gmelin, 1789, Syst. Nat., ed. 13, vol. 1, part 3, p. 1118 (type locality: America (in error)).


Range. Africa south of the Sahara.

Localities. MALI: Kati near Bamakko; Sikasso. UPPER VOLTA: Dano.

Family Colubridae

Genus Boaedon Duméril and Bibron

Boaedon fuliginosus (Boié).


Range. Southern Morocco. Senegal to Eritrea. South to South Africa.


Genus Coluber Linnaeus

Coluber dorii (Latastle).

Range. Senegal, Mali.

Localities. Mali: Kati near Bamako²; Bamako²⁴.

Coluber florulentus algirus (Jan).


Localities. Algeria: Coudia (Hoggar) (Zamensis algirus)³; Hoggar (Coluber algirus)⁹.

Coluber rhodorachis rhodorachis (Jan).
Zamensis rhodorachis Jan, 1865, in de Filippi, Viaggio in Persia, p. 356 (type locality: Persia).
Range. North Africa from Algeria to Egypt. Middle East.
Localities. Algeria: Djanet\(^1\).

Genus *Crotaphopeltis* Fitzinger

*Crotaphopeltis hotamboeia* (Laurenti).

*Crotaphopeltis hotamboeia* Laurenti, 1768, Syn. Rept., p. 85 (type locality: "India orientali").


Range. Africa south of the Sahara.

Localities. Ghana: Bawku; Binduri; Lawra; Zorsi (Zwase)\(^1\). Mali: Bamako\(^2\). Niger: Birni Nkonn\(^2\). Upper Volta: Dano\(^2\).

Genus *Dasypeltis* Wagler

*Dasypeltis scabra* (Linnaeus).


Range. Gambia to Somalia. South to the Cape. Arabia. Absent from the desert and parts of the rain forest.

Localities. Mali: Diafarabé\(^2\). Upper Volta: Garango\(^2\); sud de Tenkodogo\(^2\).

Genus *Dispholidus* Duvernoy

*Dispholidus typus* (A. Smith).

*Bucephalus typus* A. Smith, 1829, Zool. Journ., vol. 4, p. 441 (type locality: "Old Latakoo" = Lattakoo or Lithako, approx. 27°S, 24°E, Cape Province, South Africa).


Range. Senegal to Eritrea. South to the tip of South Africa. Arboreal in the savanna, but absent from the rain forest.
Localities. Ghana: Lawra\(^{15}\). Mali: Sikasso\(^{25}\). Upper Volta: Diébougou\(^{29}\).

Genus *Dromophis* Peters

*Dromophis lineatus* (Duméril and Bibron).


Range. Savanna from Mali to Zambia.

Locality Mali: Kati near Bamakko\(^{2}\).

*Dromophis praeornatus praeornatus* (Schlegel).


Range. Senegal to Nigeria.

Localities. Ghana: Bolgatanga; Lawra\(^{15}\). Mali: Sanga\(^{24}\); Sikasso\(^{25}\). Upper Volta: Dano\(^{29}\); Garango\(^{25}\).

Genus *Gonionotophis* Boulenger

*Gonionotophis grantii* (Günther).


*Gonionotophis grantii*, Boulenger, 1893, Cat. Snakes, vol. 1, p. 324, pl. 23, fig. 1 (description).


Range. Portuguese Guinea to Cameroun.

Locality. Ghana: Navrongo\(^{15}\).

Genus *Lycophidium* Duméril and Bibron

*Lycophidium irrortatum* (Leach).

*Coluber irroratus* Leach, 1819, in Bowdich, Miss. Ashantee, p. 494 (type locality: Fantee (Fanti, Ashanti, Ghana) ).

Range. Senegal to Congo.

Locality. UPPER VOLTA: Garango²³.

*Lycophidium semicinctum* Duméril and Bibron.  

Range. Senegal to Chad.

Localities. GHANA: Gambaga; Lawra¹⁵.

Genus *Lytorrhynchus* Peters

*Lytorrhynchus diadema* (Duméril and Bibron).  

Range. Desert regions of North Africa.

Localities. ALGERIA: Hoggar; Tassili N’Ajjer⁹; Tiror (Tassili)¹¹.

Genus *Macroprotodon* Guichenot

*Macroprotodon cucullatus cucullatus* (Geoffroy Saint-Hilaire).  


Localities. ALGERIA: Mont Ilaman (Hoggar)²; Hoggar⁹.

Genus *Malpolon* Fitzinger

*Malpolon moilensis* (Reuss).  
**Reptiles of Arid West Africa — Papenfuss**


**Range.** Mauritania to Egypt. Southwest Asia.

**Localities.** MALI: Adrar des Iforas; Between the Air and the Adrar (des Iforas)^11^.

**Genus Mehelya Csiki**

*Mehelya crocii* (Boulenger).


**Range.** Senegal to Nigeria.

**Locality.** MALI: Sikasso^25^.

**Genus Meizodon Fischer**

*Meizodon coronatus* (Schlegel).


**Range.** Savanna from Senegal through northern Congo to Kenya and Uganda.

**Localities.** GHANA: Lawra; Pusiga^15^. MALI: Kati near Bamakko (*Coronella coronata*); Tilembaya^20^; Diafarabé^21^; Ouana (Wana Boubou)^22^. UPPER VOLTA: Dano^20^.

**Genus Natriciteres Loveridge**

*Natriciteres olivaceus* (Peters).


Locality. MALI: Gao (Tropidonotus olivaceus)\textsuperscript{12}.

Genus \textbf{Natrix} Laurenti

\textbf{Natrix anoscopus} (Cope).


Range. Guinea to Cameroun.

Locality. UPPER VOLTA: Toussiana\textsuperscript{22}.

Genus \textbf{Philothamnus} Smith

\textbf{Philothamnus irregularis irregularis} (Leach).

\textit{Coluber irregularis} \textit{LEACH}, 1819, in Bowdich, Miss. Ashantee, p. 494 (type locality: Fantee, Gold Coast).


Range. West and Central Africa.

Localities. GHANA: Binduri; Lawra\textsuperscript{18}. MALI: Kati near Bamakko (\textit{Chlorophis emini})\textsuperscript{2}; Kayo (\textit{P. nitidus})\textsuperscript{19}; Diafarabé; Tilembaya\textsuperscript{22}; Ké Macina\textsuperscript{24}; Sikasso\textsuperscript{25}. UPPER VOLTA: Dano (\textit{P. nitidus})\textsuperscript{19}; Toussiana\textsuperscript{22}.

\textbf{Philothamnus semivariegatus semivariegatus} (A. Smith).

\textit{Dendrophis} (\textit{Philothamnus}) \textit{semivariegata} A. \textit{SMITH}, 1847, Ill. Zool. S. Africa, pls. lix, lx, lxiv, figs. 1a–b (type locality: Bushman Flat, Cape Province, South Africa (restricted by Bogert, 1940) ).


Range. Most of Africa south of the Sahara.

Localities. GHANA: Pusiga\textsuperscript{15}. MALI: Bandiagara\textsuperscript{6}.

Genus \textbf{Prosymna} Gray

\textbf{Prosymna meleagris laurteni} Loveridge.

REPTILES OF ARID WEST AFRICA — PAPENFUSS

119, no. 1, pp. 141–145 (type locality: Mongalla, Equatoria Province, Sudan).

RANGE. Southern Sudan and northern Congo west through northern Nigeria to Senegal.

LOCALITIES. GHANA: Zuarungu\(^1\). MALI: Kati near Bamako\(^2\); San\(^1\). UPPER VOLTA: Dano\(^1\).

Genus **Psammophis** Boie

**Psammophis elegans** (Shaw).

_Coluber elegans_ Shaw, 1802, Gen. Zool., vol. 3, p. 536 (type locality: South America (in error)).


RANGE. Senegal to Nigeria.

LOCALITIES. GHANA: Babile; Lawra; Zorsi (Zwase)\(^1\). MALI: Kati near Bammako ( _P. schokari_ )\(^2\); Bandiagara\(^8\); Dogo\(^2\). UPPER VOLTA: Dano\(^2\).

**Psammophis schokari** (Forskål).


RANGE. North Africa from Mauritanian and Morocco to Egypt. Middle East to India.

LOCALITIES. ALGERIA: Hogar (Hoggar)\(^1\); Hoggar\(^9\); Amsel\(^1\). MALI: Tombouctou\(^1\). NIGER: Agadez\(^1\).

**Psammophis sibilans sibilans** (Linnaeus).


RANGE. Mauritanian to Egypt. South to Natal.

LOCALITIES. ALGERIA: Tigharghart (Hoggar); Tigen Daouo (Hoggar)\(^4\); Hoggar\(^9\); Djanet; Tamrit\(^1\). GHANA: Bawku;
Lawra; Wiaga\(^{15}\). MALI: Kati near Bammako\(^{2}\); Bandiagara\(^{6}\); Mopti\(^{11}\); Diafarabé; Gourao\(^{19}\); Bamako\(^{24}\); Sikasso\(^{28}\). NIGER: Azzel (Aïr)\(^{18}\). UPPER VOLTA: Dano\(^{20}\); Garango\(^{25}\).

Genus *Rhamphiopsis* Peters

*Rhamphiopsis oxyrhynchus oxyrhynchus* (Reinhardt).


**Range.** Savanna from Mali through northern Congo to Uganda.

**Localities.** GHANA: Babile; Lawra; Wiaga\(^{15}\). MALI: Kati near Bammako\(^{2}\); Diafarabé\(^{20}\). UPPER VOLTA: Dano\(^{20}\); Ten-kodogo\(^{25}\).

Genus *Spalerosophis* Jan

*Spalerosophis diadema cliffordi* (Schlegel).


**Range.** North Africa from Senegal to Egypt. Middle East to Iraq.

**Localities.** ALGERIA: Hoggar (*Zamensis diadema*)\(^1\); Oued Edjeoni (Hoggar) (*Z. diadema*)\(^3\); Hoggar (*Coluber diadema*)\(^9\); Tamanrasset (*C. diadema*)\(^{11}\). MALI Goundam (*Z. diadema*)\(^6\). NIGER: Agadez; Tabello (Aïr)\(^{18}\).

Genus *Telescopus* Wagler

*Telescopus tripolitanus* (Werner).


Range. Senegal to southern Libya.

Localities. MALI: Kidal (Tarbophis obtusus)\(^1\). NIGER: Agadez (Tarbophis obtusus)\(^1\)

Telescopus variegatus (Reinhardt).


Range. Guinea to Cameroun.

Localities. GHANA: Babile; Gambaga; Lawra; Pusiga; Zuarungu\(^1\). MALI: Kati near Bamakko (Tarbophis variegatus)\(^2\). NIGER: Tahoua (Tarbophis variegatus)\(^1\); Tabello (Air) (Tarbophis variegatus)\(^1\); Niamey \(^2\). UPPER VOLTA: 12 miles SE. of Tenkodogo.

Family Viperidae

Genus Atractaspis Smith

Atractaspis dahomeyensis Bocage


Range. Guinea to Cameroun.

Localities. UPPER VOLTA: Bobo Dioulasso\(^1\); Toussiana\(^2\).

Atractaspis microlepidota micropholis Günther.


RANGE. Savanna from Mauritania to northern Nigeria.


Genus *Bitis* Gray

*Bitis arietans arietans* (Merrem).
*Vipera (Echidna) arietans* MERREM, 1820, Tent. Syst. Amphib., p. 152 (type locality: Cape of Good Hope).


RANGE. Morocco to Arabia. South to the Cape. Absent from the central Sahara and the rain forest.

LOCALITIES. GHANA: Lawra¹⁵. MALI: Katibougou; Sormé près Macina (Ké Macina)¹⁹; 2 miles SW. of Sévaré on road to Mopti. NIGER: Tassessat (Air) (*Bitis lachesis*)¹⁸.

Genus *Causus* Wagler

*Causus rhombeatus* (Lichtenstein).


RANGE. Africa south of the Sahara.

LOCALITIES. GHANA: Bawku; Lawra; Navongo; Pusiga¹⁵. MALI: Kati near Bamakko²; Saré Modi (Saré Malé)¹⁹; Kati²⁰; Dia Bozo (Taga Diabozo)²¹; Dogo²²; Bamako²⁴; Sikasso²⁵. UPPER VOLTA: Toussiana²²; Diébougou²³; Garango²⁵.

Genus *Cerastes* Wagler

*Cerastes cerastes* (Linnaeus).
*Cyluber cerastes* LINNAEUS, 1758, Syst. Nat., ed. 10, vol. 1, p. 217 (type locality: Orient (restricted: Egypt)).


Range. Desert regions of North Africa. Lowlands of Middle East.

Localities. ALGERIA: Tassili de Timissao; In Baragen (Teffedest); Hoggar; Tahifet; Tamrit; Oued Ilezi. MALI: Tanetzrouft (C. cornutus); Timétrine (C. cornutus). NIGER: Dungas; Nguiigm (C. cornutus); Agadez; Dabaga (Air); Oued In Kakane (5 miles NW. of I-N-Gall).

Cerastes vipera (Linnaeus).


Localities. ALGERIA: Ig’elen (Hoggar); Hoggar; Amguid; Oued Ilezi. MALI: Tanetzrouft; Between Tisserlitine and Timétrine.

Genus Echis Merrem

Echis carinatus pyramidum (Geoffroy Saint-Hilaire).


Range. Northern India, west through Middle East and North Africa. South to Kenya and Ghana.

Localities. ALGERIA: Hoggar. GHANA: Bawku; Lawra; Navrongo; Pusiga. MALI: Kidal; Kati near Bamako; Bandiagara; Adrar des Iforas, south of Kidal; Tombouctou; Kati; Bamako. NIGER: Tabello (Air). UPPER VOLTA: Dano; Garango.

Family Elapidae

Genus Elapsoidea Boulenger

Elapsoidea sundevallii moebiusi (Werner).


Elapsoidea sundevalli moebiusi, Parkes, 1949, Zool. Verhandelingen, no. 6, pp. 93–98 (discussion of geographic variation, proposal of available names, agrees with Loveridge (1944) that genus is monotypic).


Range. West Africa.

Locality. Ghana: Gambaga.¹⁵

Genus Naja Laurenti

Naja haje haje (Linnaeus).


Range. Morocco to Egypt. South to South Africa. Absent from the central Sahara and the rain forest.


Naja melanoleuca Hallowell.


Range. Forested and moist savanna regions from Senegal to Zululand.

Localities. Mali: Kati near Bamakko.¹² Upper volta: Dano.²⁰

Naja nigricollis Reinhardt.


**Range.** Savanna of Africa south of the Sahara. According to Mr. Barry Hughes, University of Ghana, Accra, Ghana (personal communication), *Naja katiensis* should be considered distinct at the species level because it is sympatric with typical *Naja nigricollis* over a large area of northern Ghana and Upper Volta.

**Localities.** GHANA: Babile; Bawku; Lawra; Tumu; Zorsi (*Naja katiensis*)\(^{15}\). MALI: Kati near Bamako\(^2\); Kati\(^{20}\); Sidasso\(^{25}\). NIGER: Irabetabénon (Monts Baguezans, Air)\(^{18}\). UPPER VOLTA: Dano\(^{20}\).

**Order CHELONIA**

**Family TESTUDINIDAE**

**Genus Clemmys** Ritgen

*Clemmys caspica leprosa* (Schweigger).


**Range.** Iberian Peninsula, Morocco and Senegal to Libya and Niger.

**Localities.** MALI: Adrar des Iforas (Loveridge and Williams, 1957, p. 201). NIGER: Agadez (*C. leprosa*)\(^{18}\).

**Genus Geocheleon** Fitzinger

*Geocheleon sulcata* (Miller).

*Testudo sulcata* Miller, 1780, Icones animalium et planatarum, pl. xxvi (type locality: India occidentali (in error)).


**Range.** Savanna south of the Sahara from Senegal to Eritrea.
LOCALITIES. MALI: Doentza; Tombouctou (sight records of author).

Family Trionychidae

Genus Cyclanorbis Duméril and Bibron

Cyclanorbis senegalensis (Duméril and Bibron).


Range. Senegal to Sudan.


Genus Trionyx Geoffroy

Trionyx triunguis (Forskål).


Range. Senegal to Egypt. South to Angola. Israel.

Locality. NIGER: Bilchem (not located)\(^1\).

Family Pelomedusidae

Genus Pelomedusa Wagler

Pelomedusa subrufa (Lacépède).


Locality. MALI: Kati near Bamakko (P. galeata)\(^2\).
REPTILES OF ARID WEST AFRICA — PAPENFUSS

Order LORICATA
Family CROCODYLIDAE
Genus Crocodylus Laurenti

Crocodylus niloticus Laurenti.


Localities. ALGERIA: Tassili des Ajjers (extinct?)¹¹. NIGER: Tapoa (sight record of author).

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