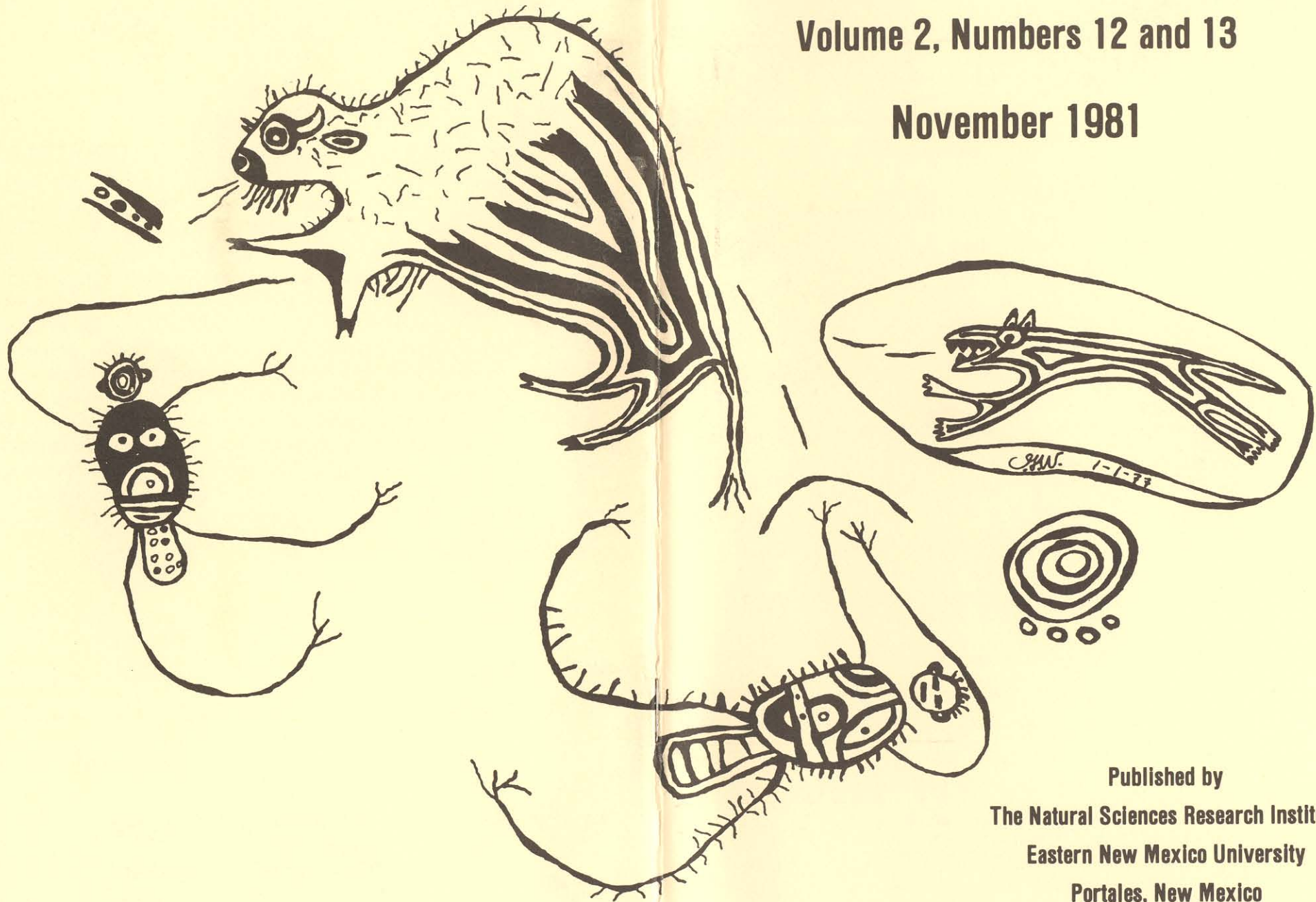


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Synopsis of Puerto Rican Mammals

by

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ABSTRACT

Taxonomy and distribution of the mammalian fauna of Puerto Rico, including extant and extinct taxa, are reviewed. One fossil insectivore, one fossil and 16 extant chiropterans, two fossil edentates, three introduced and five fossil rodents, and one introduced carnivore have been reported from Puerto Rico and the nearby islands of Culebra, Mona, and Vieques.

INTRODUCTION

Puerto Rico is located in the Caribbean Sea southeast of Cuba and east of Hispanola. It is considered neotropical based upon its floristic and faunistic affinities (Vaughan 1972). Like much of the New World tropics, it lacks recent systematic mammalian studies. The only comprehensive faunistic surveys of Puerto Rico and adjacent islands were conducted more than 50 years ago by Anthony (1918, 1925-1926). More recent knowledge of the island's mammals has been contributed by Starrett (1962), Fenton (1968), Choate and Birney (1968), Tamsitt and Valdivieso (1970), Weinbren et al. (1970), and Genoways and Baker (1975). In addition, Martin (1972) included Puerto Rico in his review of North American fossil bats, while Jones and Phillips (1970) made many references to Puerto Rico in their study of Lesser Antillean bats. None of these recent studies reviewed the complete literature on Puerto Rico's mammals.

We reviewed all literature on both extant and extinct mammals of Puerto Rico and nearby Mona, Culebra, and Vieques islands. Our purposes were to provide a working bibliography for future investigators and to clarify the taxonomic designations of these mammals. In addition, a synopsis of this type can form the basis for gaining insight into possible faunal changes that have occurred, and provide information that can be used to predict faunal

changes that might be caused by human interactions on natural habitats in Puerto Rico.

Except for the spelling of Puerto Rico (Porto Rico in some of the older literature), locality designations are given as recorded by the cited authors. Some references are apparently to the same locality, but to avoid misinterpretation only original spelling or wording has been presented. Unless otherwise indicated, subspecies names have been assigned according to the range maps in Hall and Kelson (1959). A double cross before a species name indicates an extinct genus and species. A single cross preceding a species name refers to an extinct species or subspecies of an extant genus.

ACCOUNTS OF SPECIES

Order Insectivora, Insectivores

Family Nesophontidae, Nesophontid Insectivores

++*Nesophontes edithae* Anthony 1916a

Puerto Rican Nesophontes

Ciales (Reynolds et al. 1953); Cueva Catedral, near Morovis (Anthony 1916a); Cueva de Clara (Anthony 1916a, Choate and Birney 1968); Cueva del Perro (Choate and Birney 1968); Cueva de Silva (Choate and Birney 1968); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Hacienda Jobo (Reynolds et al. 1953), near Utuado (Anthony 1918); Manatí (Reynolds et al. 1953); Morovis (Reynolds et al. 1953), Cueva Clara and Cueva Catedral (Anthony 1918); Río Piedras (Reynolds et al. 1953); Utuado (Anthony 1918, Reynolds et al. 1953).

Order Chiroptera, Bats

Family Noctilionidae, Bulldog Bats

Noctilio leporinus mastivus (Dahl 1797)

Mexican Bulldog Bat

Cueva de Clara (Choate and Birney 1968); Cueva Monte Grande, between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Loisa Vieja (Davis 1973); Old Loíza, near San Juan on the northern coast "Piedra de la Cueva" (Anthony 1918); Vega Baja (Goodwin 1928). Choate and Birney (1968) have noted that the records of *N. l. mastivus* cited by Elliot (1905), Goldman (1915), Anthony (1918), and Hall and Kelson (1959) from Mona Island actually refer to Monos Island near Port-of-Spain, Trinidad (also see Benedict 1926).

Family Mormoopidae, American Leaf-nosed Bats

Pteronotus fuliginosus inflatus (Rehn 1904)

Sooty Mustached Bat

=*Chilonycteris macleayii inflata* of Rehn (1904), G. M. Allen (1911), and Miller (1912).

=*Chilonycteris fuliginosa inflata* of Anthony (1918), Reynolds et al. (1953), and Hall and Kelson (1959).

Puerto Rico (G. M. Allen 1911, Reynolds et al. 1953); Aguas Buenas caves (Beck et al. 1976); Cueva del Burro, between Vega Alta and Vega Baja (Smith 1972); Cueva de Fari (Anthony 1918), near Pueblo Viejo (Rehn 1904, Miller 1912, Smith 1972); Cueva de Trujillo Alto (Anthony 1918, Hall and Kelson 1959, Smith 1972); Mayagüez (Gundlach 1878, Rehn 1904, Anthony 1918, Hall and Kelson 1959, Smith 1972); San Juan (Smith 1972); Torro Negro Doña Juan(a) Recreation Area (Smith 1972); Vega Baja (Smith 1972); 7.5 km E Guánica (Smith 1972). Smith (1972) regarded the subspecies *inflata* as a junior synonym of *P. f. fuliginosus*.

Pteronotus parnelli portoricensis (Miller 1902)

Parnell's Mustached Bat

=*Chilonycteris portoricensis* of Miller (1902) and Elliot (1905).

=*Chilonycteris parnelli portoricensis* of Rehn (1904), G. M. Allen (1911), Anthony (1918), and Reynolds et al. (1953).

Aguas Buenas caves (Beck et al. 1976); Cave near Pueblo Viejo (Miller 1902, Elliot 1905); Cayey (Anthony 1918, Reynolds et al. 1953); Cueva Catedral (Anthony 1918); Cueva de Clara (Choate and Birney 1968); Cueva de Fari, near Pueblo Viejo (Smith 1972), Bayamón District (Rehn 1904, Anthony 1918); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Cueva de Trujillo Alto (Anthony 1918, Smith 1972); Morovis (Reynolds et al. 1953); Pueblo Viejo (Reynolds et al. 1953, Smith 1972), Bayamón District (G. M. Allen 1911); Trujillo Alto (Reynolds et al. 1953).

Mormoops blainvillii cuvieri (Leach 1821)

Blainville's Leaf-chinned Bat

Aguas Buenas caves (Beck et al. 1976); Cueva de Clara (Choate and Birney 1968); Cueva de Trujillo Alto (Anthony 1918, Smith 1972); "la parte meridional de la Isla" (Gundlach 1878); Los Chorros Cave, near Arecibo (Smith 1972); Mayagüez (Smith 1972); Mona Island (Rehn 1902, Anthony 1918), between Hispanola and Puerto Rico (Smith 1972). Smith (1972) regarded *M. blainvillii* as monotypic.

Macrotus waterhousii waterhousii Gray 1843
Waterhouse's Leaf-nosed Bat
Cueva de Clara (Choate and Birney 1968).

Monophyllus plethodon frater Anthony 1917a
Barbados Long-tongued Bat
=*Monophyllus frater* of Anthony (1917a, 1918).

Arecibo (Schwartz and Jones 1967); Cueva Catedral (Schwartz and Jones 1967), near Morovis (Anthony 1917a, 1918); Cueva de Clara (Choate and Birney 1968); Cueva del Perro (Choate and Birney 1968); Morovis (Schwartz and Jones 1967).

Monophyllus redmani portoricensis Miller 1900
Jamaican Long-tongued Bat

=*Monophyllus portoricensis* of Miller (1900), Elliot (1905), G.M. Allen (1911), Anthony (1918), and Reynolds et al. (1953).

Aguas Buenas caves (Beck et al. 1976); Bayamón (G.M. Allen 1911, Anthony 1918); ca. 1 km NE Cidra, 1300 ft. (Schwartz and Jones 1967); cave near Bayamón (Miller 1900, Elliot 1905); Cayey (Anthony 1918); Cueva Catedral (Anthony 1918); Cueva de Clara (Choate and Birney 1968), near Morovis (Schwartz and Jones 1967); Cueva de Fari, near San Juan (Anthony 1918); Cueva de Fari, Pueblo Viejo (Anthony 1918); Cueva de Trujillo Alto (Anthony 1918), Trujillo Alto (Anthony 1925-1926, Schwartz and Jones 1967); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Cueva Oscura, Aguas Buenas (Carvajal and Vázquez, mimeo); El Verde experimental area, Puerto Rico Nuclear Center, Luquillo National Forest (Tamsitt and Valdivieso 1970); 7.5 km E Guánica (Schwartz and Jones 1967); Morovis (Anthony 1925-1926); Pueblo Viejo (Anthony 1925-1926); 17.7 km NE Utuado (Schwartz and Jones 1967).

Brachyphylla cavernarum Gray 1834
St. Vincent Fruit-eating Bat

Puerto Rico (Miller 1913); Aguas Buenas caves (Beck et al. 1976); Cayey (Anthony 1918); Comerio (Anthony 1918); Corozal (Anthony 1918); Cueva Catedral, Morovis (Anthony 1918); Cueva de Clara (Choate and Birney 1968); Cueva de Fari, Pueblo Viejo (Anthony 1918); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Cueva Oscura, Aguas Buenas (Carvajal and Vázquez, mimeo); Cueva del Perro (Choate and

Birney 1968); Cueva de Silva (Choate and Birney 1968); Cueva de Trujillo Alto (Anthony 1918); Morovis (Anthony 1918); Pueblo Viejo (Anthony 1918); Río Camuy, Barrio Angeles, Utuado, 300 m (Choate and Birney 1968); Trujillo Alto (Anthony 1918).

Artibeus jamaicensis jamaicensis Leach 1821
Jamaican Fruit-eating Bat

=*Artibeus "perspicillatus"* of J. A. Allen (1890).

Puerto Rico (J. A. Allen 1890, Andersen 1908, G. M. Allen 1911); Aguas Buenas (Anthony 1918) caves (Beck et al. 1976); Cayey (Anthony 1918); Comerio (Anthony 1918); Corozal (Anthony 1918); Cueva de Clara (Choate and Birney 1968); Cueva de Fari, Pueblo Viejo (Anthony 1918); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Cueva Oscura, Aguas Buenas (Carvajal and Vázquez, mimeo); Cueva del Perro (Choate and Birney 1968); El Verde experimental area, Puerto Rico Nuclear Center, Luquillo National Forest (Tamsitt and Valdivieso 1970); Hda. Catalina (Anthony 1918); Lares (Anthony 1918); Morovis (Anthony 1918); northern coast of Culebra Island (Heatwole et al. 1963); Old Loíza (Anthony 1918); Quebradillas (Anthony 1918); San Germán (Anthony 1918); Toa Alta (Anthony 1918); Trujillo Alto (Anthony 1918); Utuado (Anthony 1918).

Stenoderma rufum Desmarest 1820
Red Fig-eating Bat

Three subspecies--*S. r. rufum*, *S. r. anthonyii*, and *S. r. darioi*--have been reported from Puerto Rico (see Choate and Birney 1968, Hall and Tamsitt 1968, Jones et al. 1971). Cueva Catedral, Morovis (Anthony 1918); Cueva de Clara, approximately 1/2 mi. N, 3 mi. W Morovis, Barahona District (Hall and Bee 1960); Cueva del Perro (Choate and Birney 1968); El Verde experimental area, Puerto Rico Nuclear Center, Luquillo National Forest (Tamsitt and Valdivieso 1970); Near El Verde Research Station, Luquillo National Forest (Jones et al. 1971); Puerto Rico Nuclear Center Field Station in the Luquillo Forest near El Verde (Tamsitt and Valdivieso 1966); 1 mi. NW El Yunque Peak, 355 m (Hall and Tamsitt 1968); 17 km NE Utuado (Choate and Birney, 1968); 17.5 km NE Utuado (Hall and Tamsitt, 1968).

Erophylla bombifrons bombifrons (Miller 1899)
Brown Flower Bat

=*Phyllonyctris bombifrons* of Miller (1899) and Elliot (1905).

Aguas Buenas caves (Beck et al. 1976); Bayamón (Anthony 1918);

cave near Bayamón (Elliot 1905); Cueva de Fari, near San Juan (Anthony 1918); Cueva de Fari, Pueblo Viejo (Anthony 1918); Cueva Oscura, Aguas Buenas (Carvajal and Vázquez, mimeo); El Verde experimental area, Puerto Rico Nuclear Center, Luquillo National Forest (Tamsitt and Valdivieso 1970); limestone cave near Bayamón, Province of San Juan (Miller 1899); near Bayamón (G. M. Allen 1911); 5 1/2 mi. NE Utuado (Choate and Birney 1968).

+*Phyllonycteris major* Anthony 1917a
Puerto Rican Flower Bat

Cueva Catedral, near Morovis (Anthony 1917a); Cueva de Clara (Choate and Birney 1968); Cueva del Perro (Choate and Birney 1968).

Family Vespertilionidae, Vespertilionid Bats
Eptesicus fuscus wetmorei Jackson 1916
Big Brown Bat

=*Eptesicus wetmorei* of Jackson (1916).

Aguas Buenas caves (Beck et al. 1976); 1 mi. W Corozal (Genoways and Baker 1975); Cueva Catedral (Anthony 1918); Cueva de Clara (Choate and Birney 1968); Cueva de Fari, Pueblo Viejo (Anthony 1918); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Cueva del Perro (Choate and Birney 1968); El Verde (Genoways and Baker 1975); El Yunque Forest (Genoways and Baker 1975); Maricao (Anthony 1918, Chamel 1945), altitude 1375 ft. (Jackson 1916); Pueblo Viejo (Anthony 1925-1926); San Germán (Anthony 1918, Genoways and Baker 1975); Trujillo Alto (Reynolds et al. 1953).

Lasiurus borealis minor Miller 1931
Red Bat

Near Moca (Starrett and Rolle 1963).

Family Molosidae, Free-tailed Bats
Tadarida brasiliensis antillarum (Miller 1902)
Brazilian Free-tailed Bat

=*Nyctinomus musculus* of Elliot (1905).
=*Nyctinomus brasiliensis musculus* of G. M. Allen (1911).
=*Nyctinomus murinus* of Anthony (1918).
=*Tadarida antillarum* of Chamel (1931).

Puerto Rico (Miller 1902, Elliot 1905, G. M. Allen 1911, Chamel 1931); Adjuntas (Anthony 1918); Cabo Rojo (Anthony 1918); Caguas (Schwartz 1955); Cueva de Clara (Choate and Birney 1968); Cueva del Perro (Choate and Birney 1968); Manatí (Anthony 1918, Schwartz 1955); Mayagüez (Schwartz 1955); San Germán (Anthony 1918); Utuado (Anthony 1918).

Molossus molossus debilis Miller 1913

Kerr's Mastiff Bat

Puerto Rico (Jones and Phillips 1970).

Molossus fortis Miller 1913

Large Mastiff Bat

Adjuntas (Anthony 1918); Aibonito (Anthony 1918); Canóvanas (Heatwole et al. 1964); Dewey, Culebra Island (Heatwole et al. 1963); Luquillo (Miller 1913, Anthony 1918); Mameyes (Anthony 1918); San Germán (Anthony 1918); Utuado (Anthony 1918, Heatwole et al. 1964).

Order Edentata, Sloths, Anteaters, and Armadillos

Family Megalonychidae, Ground Sloths

++*Acratocnus odontrigonus* Anthony 1916b

Small Cuban Ground Sloth

Aguas Buenas caves (Beck et al. 1976); Ciales (Anthony 1918); Cueva de la Ceiba (Anthony 1918), near Utuado (Anthony 1916b); Hacienda Jobo, near Utuado (Anthony 1918); Morovis (Anthony 1918); Utuado (Anthony 1918).

++*Acratocnus major* Anthony 1916b

Big Cuban Ground Sloth

Cave on the property of Don Gervacio Toraño, near Utuado (Anthony 1916b).

Order Rodentia, Rodents

Family Muridae, Murids

Rattus sp. Fisher 1803

Old World Rat

Two species of *Rattus* have been introduced into Puerto Rico. Gundlach (1878) refers to *Mus rattus* from Puerto Rico, but gives no collecting locality. G. M. Allen (1911) mentioned an "authentic record" of *Epimys rattus*

alexandrinus from Puerto Rico. Reynolds et al. (1953) noted *Rattus* sp. from Cueva Monte Grande between Mayagüez and Cabo Rojo. Weinbren et al. (1970) studied *Rattus rattus* in the Luquillo Experimental Forest at El Verde, and mentioned that *R. norvegicus* also occurs on Puerto Rico.

Mus musculus Linnaeus 1758
House Mouse

We have been unable to locate Puerto Rican specimens of this introduced species, but G. M. Allen (1911) reported an "authentic record" from Puerto Rico.

Family Heptaxodontidae, Heptaxodonts
++*Heptaxodon bidens* Anthony 1917b
Extinct Heptaxodon

Cave on the property of Don Gervacio Toraño, near Utuado (Anthony 1917b); Ciales (Anthony 1918); Cueva Clara, near Morovis (Anthony 1918); Utuado, cave on the property of Don Gervacio Toraño

++*Elasmodontomys obliquus* Anthony 1916b
Extinct Elasmodon

Ciales (Anthony 1918, Reynolds et al. 1953); Cueva de la Ceiba, near Utuado (Anthony 1916b); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Morovis (Anthony 1918, Reynolds et al. 1953); Río Piedras (Reynolds et al. 1953); Utuado (Anthony 1918, Reynolds et al. 1953).

Family Capromyidae, Hutias and Coypus
++*Isolobodon portoricensis* J. A. Allen 1916
Allen's Hutia

A fossil tooth of a "Hutia" was collected in Aguas Buenas caves (Beck et al. 1976). Aguirri (Reynolds et al. 1953); Cabo Rojo (Anthony 1918); Ciales (Anthony 1918); Cueva de la Ceiba, near Utuado (Anthony 1918); Cueva de la Seiba, near Utuado (J. A. Allen 1916); Cueva Monte Grande between Mayagüez and Cabo Rojo (Reynolds et al. 1953); Manatí (Anthony 1918); Mona (Reynolds et al. 1953); Saliche (Reynolds et al. 1953); Salina (Anthony 1918); San Germán (Anthony 1918).

Family Echimyidae, Spiny Rats
++*Heteropsomys insulans* Anthony 1916b

Extinct Spiny Rat

Cueva de la Ceiba, near Utuado (Anthony 1916b, 1918); Hacienda Jobo (Anthony 1918).

++*Homopsomys antillensis* Anthony 1917b
Extinct Spiny Rat

Cave on the property of Don Gervacio Toraño, near Utuado (Anthony 1917b, 1918); Ciales (Anthony 1918).

Order Carnivora, Carnivores
Family Viverridae, Viverrids
Herpestes sp. Illiger 1811

Mongoose

The correct species designations for Puerto Rican mongooses is not clear. We have been unable to locate specimens from the island. Palmer (1899) related accounts of these animals being introduced into Puerto Rico and made reference to *H. mungo* and *H. griseus*. He noted the presence of mongooses on the island of Vieques, along the coast of Puerto Rico at Arecibo, San Juan, Fajardo, Arroyo, Ponce, Mayagüez, and in the interior at Utuado and Adjuntas. Later G. M. Allen (1911) reported an "authentic record" of *Mungos birmanicus* from Puerto Rico. Weinbren et al. (1970) noted that *H. mungo* was occasionally seen in Puerto Rico.

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