#### 59.9 (72.2)

# Article XIII.—MAMMALS COLLECTED BY THE 'ALBATROSS' EXPEDITION IN LOWER CALIFORNIA IN 1911, WITH DESCRIPTIONS OF NEW SPECIES.<sup>1</sup>

#### By Charles Haskins Townsend.

[By permission of the U. S. Commissioner of Fisheries.

### PLATES VIII AND IX.

The mammals brought back by the 'Albatross' Expedition number 259 specimens, representing 59 species, ten of which, from islands in the Gulf of California, appear to be undescribed.

Mammals, usually of the smaller kinds, were obtained at nearly all of the twenty-seven localities visited by the ship. While a single night's trapping often yielded numerous specimens, many were destroyed by ants before the traps could be visited in the morning. Wood rats, pocket mice and deer mice were especially numerous, and it was possible to obtain them by setting traps almost anywhere in the bushes near the beaches.

Deer and coyotes were obtained at two, hares at six, spermophiles at three, and kangaroo rats at four localities. Specimens of lynx, fox, raccoon, skunk, and gopher were secured only in the Sierra Laguna mountains by a collector sent from the ship. The elephant seal was found only at Guadalupe Island. As the work of the cruise included deep sea investigations, sometimes at considerable distances from land, all anchorages were of short duration and at points rather widely separated.

The greater part of the collection of mammals was prepared by Mr. H. E. Anthony, now of the Museum staff.

The islands visited include Guadalupe, the San Benitas, Cedros, Magdalena, Margarita, and San Roque in the Pacific, and Ceralbo, Espiritu Santo, San José, Santa Cruz, Santa Catalina, Carmen, Angel Guardia, San Esteban, and Tiburon in the Gulf. In physical characteristics, the islands bear close resemblance to the coastal regions of the Peninsula, having the same desert-like appearance. Some of them are totally without fresh water, and most of them are uninhabited. Small mammals were obtained only at islands where the traps could be left out over night.

The following notes relate to islands from which new species were procured.

<sup>&</sup>lt;sup>1</sup> Scientific Results of the Expedition to the Gulf of California in Charge of C. H. Townsend, by the U. S. Fisheries Steamship 'Albatross' in 1911. Commander G. H. Burrage, U. S. N., Commanding.

Tiburon is the largest island in the Gulf; it is thirty miles long by about fifteen in width, and has a height of 4000 feet. It is separated from the Mexican mainland by a channel from one to three miles wide, and is inhabited by Seri Indians reputed to be dangerous to small parties.

Angel de la Guardia is near the western shore of the Gulf. It is forty miles long by about ten miles wide, and has a height of about 4000 feet; it is without fresh water and is uninhabited.

San Esteban is exceedingly rough and mountainous with a height of 1800 feet and a diameter of about four miles. It lies eight miles southwest of Tiburon, is without fresh water and is uninhabited.

Carmen, near the Peninsula, is seventeen miles long by five and a half miles wide, and has a height of 1500 feet. Important salt-works are located here.

### List of Species.

### DELPHINIDÆ. PORPOISES, DOLPHINS, ETC.

Porpoises were observed almost daily while the 'Albatross' was in the Gulf of California. They were especially numerous about the head of Concepcion Bay, where a band of two hundred or more came near the anchorage and showed little fear of the launch which several times passed among them.

### 1. Tursiops nuuanu Andrews. Nuuanu Dolphin.

Two skulls, Santa Catalina Island, April 16.

The skulls obtained by the 'Albatross' Expedition at Santa Catalina Island, when compared with a skull obtained by Mr. J. T. Nichols, in the Pacific (Lat. 12° N., Long. 120° W.), were found to be identical. The species was then described by Mr. R. C. Andrews in Bull. Am. Mus. Nat. Hist., Vol. XXX, Art. IX, pp. 233–237, August 26, 1911.

### 2. Tursiops gilli Dall. Gill's Dolphin.

Skull, San Bartolome Bay, March 14.

Porpoises were seen daily while the 'Albatross' remained in San Bartolome Bay. The skull obtained was found on the beach with portions of the skeleton.

### 3. Globicephalus scammoni Cope. Scammon's Black-fish.

Twelve skulls, Santa Cruz Island, April 16.

There were many skulls and skeletons of this species on the beaches at

Santa Cruz Island, and also at Santa Catalina, where we called the same day. There was evidence that all the animals had been killed for their oil.

### BOVIDÆ. SHEEP, BISON, ETC.

We were informed by a resident that the mountain sheep is found among the high, rugged hills on both sides of Concepcion Bay, but it is more numerous on the ranges further inland. Only one was seen by our party.

Our informant, Sr. Liberato Castro, from whom the horns were received, said that we would find good sheep hunting on Tiburon Island, but no traces of the species were found during our hunting there on April 12–13. The name used at Concepcion Bay for the mountain sheep is "borrego cimmaron." The species is found throughout the desert ranges of the eastern side of the Peninsula, from west of the mouth of the Rio Colorado southward to near La Paz.

4. Ovis cervina cremnobates. Elliot. Lower California Mountain Sheep.

Four pairs of horns, south end of Concepcion Bay, April 7.

ANTILOCAPRIDÆ. PRONG-HORN ANTELOPE.

5. Antilocapra americana mexicana Merriam. Lower California Antelope.

One head, inland from Santa Rosalia Bay.

The antelope was formerly found on many of the plains of Lower California, but is now rare. It is not at present known to exist further south than the Santa Clara Desert, about midway on the Peninsula.

#### CERVIDÆ. DEER.

6. Odocoileus hemionus peninsulæ Lydekker. Lower California
Deer.

Male juv., San Bartolome Bay, March 14; female, San Bernado Mountains, May 13; male, San Bernado Mountains, May 15, 600 ft.; male, San Bernado Mountains, May 16, 600 ft.

On the Peninsula deer were seen at only a few localities, but are said to be rather common.

### 7. Odocoileus hemionus eremicus Mearns. Tiburon Island Deer.

Male and female ad., Tiburon Island; male, antlers only, all from Tiburon Island, April 12.

Deer are abundant at Tiburon Island if one may judge by their tracks and trails. Several of the animals were seen and two specimens were obtained. The weight of a heavily antlered buck, killed by Lieut. Stanley, was 121 pounds after evisceration.

### 8. Odocoileus cerrosensis Merriam. Cedros Island Deer.

Fragments of weathered antlers, Cedros Island. Probably now extinct; killed formerly by miners for food.

### LEPORIDÆ. HARES, RABBITS.

The collection of jack rabbits although small contains two especially striking forms, the grayish or silvery rabbit of Tiburon Island, allied to species of the Mexican mainland, and the remarkably dark species peculiar to Espiritu Santo Island. The latter with its glossy black back resembles no other rabbit, and is a most striking variation from the form inhabiting the adjacent coast of the Peninsula.

### 9. Lepus californicus magdalenæ Nelson. Magdalena Island Jack Rabbit.

Male, Santa Margarita Island, March 20.

### 10. Lepus californicus xanti Thomas. Cape San Lucas Jack Rabbit.

Male, Cape San Lucas, March 24; female, Pichilinque Bay, March 28.

### 11. Lepus insularis Bryant. Espiritu Santo Jack Rabbit.

Female, Pichilinque Island, March 27,—introduced from Espiritu Santo Island; female, Espiritu Santo Island, April 18.

### Lepus alleni tiburonensis subsp. nov. Tiburon Island Jack Rabbit.

Closely related to *L. alleni*, from which it differs in being much darker and more iron gray, the buffiness on the back being rather pale and much overlaid and mixed with black.

Sides of body and outside of legs much darker and more iron gray than in alleni. Rump patch darker and less differentiated from color of back. Iron gray of sides extending on underparts, leaving only a narrow median white area. Under side of neck more buff, ears darker and grayer. Top of head very similar to alleni.

Type, No. 31990, male. Represented by three males in rather worn spring pelage, Tiburon Island, April 13.

A dozen or more of these rabbits were seen by our party. Measurements, average of three specimens: total length, 610; tail, 63, hind foot 127.

### HETEROMYIDÆ. POCKET MICE, KANGAROO RATS, ETC.

Pocket mice of the genus *Perognathus* are naturally abundant in the desert-like country of Lower California, and were obtained at all localities where the traps were set at night.

There were signs that they were quite as common on the islands as on the Peninsula. They are burrowers, nocturnal in habit, and feed on seeds which they collect and carry in their cheek pouches.

# 13. Perognathus penicillatus arenarius Merriam. Little Desert Pocket Mouse.

Male, San Bartolome Bay, March 14; male San Francisquito Bay, April 10.

# 14. Perognathus spinatus peninsulæ Merriam. Cape San Lucas Pocket Mouse.

Seven males, 3 females, Cape San Lucas, March 24; 5 males, San José del Cabo, March 26; 2 males and 2 females, Pichilinque Bay, March 28–30; male, Agua Verde Bay, April 2; male and female, Mulege, April 5; male, Concepcion Bay, April 8; 3 males, Miraflores, April 25; female, San Bernado Mountains, May 5.

### 15. Perognathus penicillatus siccus Osgood.

Male, 2 females, Cape San Lucas, March 24.

# 16. Perognathus baileyi rhydinorhis Elliot. San Quentin Pocket Mouse.

Two males and 3 females, Pichilinque Bay, March 29-30; male, Concepcion Bay, April 8.

## 17. **Perognathus fallax** Merriam. Short-eared California Pocket Mouse.

Female, San Bartolome Bay, March 14.

### 18. Perognathus spinatus bryanti Merriam. BRYANT POCKET MOUSE.

Four males, female, San José Island, April 1; 3 males, Espiritu Santo Island, April 19.

# 19. **Perognathus baileyi insularis** subsp. nov. Tiburon Island Pocket Mouse.

In size and color about the same as *P. penicillatus pricei*. Skull in general rather narrower; rostrum and nasals narrower; interparietal larger. Ascending branches of supraoccipital narrower; maxillary arm of zygoma weaker.

Type, No. 31846, male.

Represented by 2 males and 1 female, Tiburon Island, April 13.

Measurements, average of three specimens: total length, 212; tail, 119; hind foot, 27.3.

# 20. Perognathus penicillatus goldmani subsp. nov. Goldman's Pocket Mouse.

In general size and color about the same as P. baileyi; skull slightly smaller and lighter; molariform toothrow shorter; inner side of parietal shorter. Named for Edward A. Goldman.

Type, No. 31845, male, Tiburon Island, April 13.  $\,$ 

Measurements of the type: total length, 171; tail, 90; hind foot, 23.

## 21. **Perognathus spinatus nelsoni** subsp. nov. Carmen Island Pocket Mouse.

Compared with *P. spinatus peninsula*, the color is grayer and lacks the drab brown effect seen in *peninsula*; general size similar, but tail slightly shorter — decidedly shorter than in *bryanti*.

Type, No. 31855, male.

Represented by 2 males and 1 female, Carmen Island, April 3. Named for Edward W. Nelson, well known for his studies of Lower California mammals. Measurements, average of three specimens: total length, 172; tail, 93; hind foot, 24.

Kangaroo rats are very abundant on Tiburon Island where there were many tracts of level ground conspicuously marked with their burrows and well-beaten trails. Being nocturnal, we saw nothing of them, but the traps yielded specimens both nights we were at the island. They did not appear to be so common at other places visited by the 'Albatross'.

#### KANGAROO RATS.

Kangaroo rats are handsome animals with velvety fur, and derive their name from the long hind legs and tail and the habit of leaping kangaroo fashion. They have cheek pouches in which food is carried to their burrows.

- Dipodomys insularis Merriam. San José Island Kangaroo Rat.
   Male, 2 females, San José Island, April 1.
- Dipodomys merriami Mearns. TIBURON ISLAND KANGAROO RAT.
   Seven males and 1 female, Tiburon Island, April 12–13.
- Dipodomys merriami simiolus Rhoads. Allied Kangaroo Rat.
   Male, 3 females, San Francisquito Bay, April 10.
  - 25. Dipodomys merriami melanurus Merriam. Black-tailed Kangaroo Rat.

Six specimens, Miraflores, April 25-May 2.

GEOMYLIDÆ. POCKET GOPHERS.

These animals are active burrowers, living almost entirely under ground. They are vegetable feeders and have cheek pouches in which to carry food.

26. **Thomomys bottæ anitæ** Allen. Santa Anita Pocket Gopher. Seven specimens, Miraflores, April 28-May 4.

MURIDÆ. WOOD RATS, DEER MICE, ETC.

Wood rats were obtained by night trapping at most of the localities visited by the 'Albatross'. It is, by reason of its conspicuous brush nest, more in evidence than any other mammal. Nests were seen by the dozen in all sorts of locations, from the high, rocky ridges, down to the mangrove belts along the lagoons. One nest high up on Margarita Island, was built quite in the open against the side of a rock commanding an extensive view. The broken twigs of which it was largely composed, were covered entirely

over with pieces of cactus, the dried dung of burros and cattle and a bushel of small stones. Another, just back of the beach and in the center of a clump of cactus, was five feet in diameter and completely covered with pebbles and sea shells. Another among the mangroves on Magdalena Island was six feet in diameter and composed entirely of mangrove twigs. Its base was well secured among elevated mangrove roots and more than a foot clear of the marshy ground beneath. There must have been a score of wood rat nests among the mangroves on Magdalena Island within a radius of 500 yards and many of the structures were five feet high. Any kind of portable object in the vicinity of a wood rat's nest may be used in its composition.

- Neotoma intermedia gilva. Rhoads. Yellow Wood Rat.
   Female, San Bartolome Bay, March 14.
- Neotoma intermedia pretiosa Goldman. MATANCITA WOOD RAT.
   Five males, 3 females, Santa Margarita Island, March 19-21.
  - 29. Neotoma intermedia arenacea Allen. Cape Wood Rat.

    Three males, 2 females, Cape San Lucas, March 24-25.
- 30. Neotoma intermedia perpallida Goldman. San José Island Wood Rat.

Five males, 1 female, San José Island, March 31-April 1.

31. Neotoma intermedia Rhoads. Rhoads's Wood Rat.

Female, Agua Verde Bay, April 2; 2 females, Mulege, April 5, Concepcion Bay, April 8; female, San Bernado Mountains, May 16; 2 juv., Miraflores, April 25–30.

- Neotoma intermedia vicina Goldman. Espiritu Santo Wood Rat.
   Female, Espiritu Santo Island, April 19.
  - 33. Neotoma nudicauda Goldman. CARMEN ISLAND WOOD RAT.

    Two females, Carmen Island, April 3.

### 34. Neotoma albigula seri subsp. nov. Tiburon Island Wood Rat.

In color similar to N. albigula, which it resembles more nearly than any other species. Teeth rather small; interorbitals narrow; interparietals small as compared with albigula. Named for the Seri Indians inhabiting Tiburon Island.

Type No. 31940, male.

Represented by 1 male and 2 females, Tiburon Island, April 12–13. Measurements, average of three specimens: total length, 328; tail, 149; hind foot, 34.

### 35. Neotoma insularis sp. nov. Angel Island Wood Rat.

Nearest to *N. intermedia gilva* and about the same size, but paler, grayer and less yellowish. Skull relatively shorter and broader, with heavier rostrum, heavier dentition and larger auditory bullæ.

Type No. 21922, female, Angel del la Guardia Island, April 11.

Measurements of type: total length, 290; tail, 120; hind foot, 35.

#### DEER MICE.

These nocturnal animals, abundant in most parts of North America, are common almost everywhere in Lower California and the outlying islands. The traps set for them at night seldom failed to yield specimens, but we learned little of their habits. They feed largely on seeds and inhabit all sorts of natural crevices under rocks and the roots of trees and bushes. They are extensively preyed upon by owls, snakes, and weasels.

- 36. **Peromyscus eremicus cedroscensis** Allen. CEDROS ISLAND MOUSE. One male, 3 females, Cedros Island, March 10-12.
- 37. **Peromyscus maniculatus coolidgi** Thomas. Coolidge's Field Mouse.

Female, San Bartolome Bay, March 14.

38. Peromyscus eremicus polypolius Osgood. Margarita Island Mouse.

Three males, 4 females, Santa Margarita Island, March 19-21.

39. Peromyscus eremicus eva Thomas. Eva's Mouse.

Four males, Cape San Lucas, March 24–25; 1 male, San José del Cabo, March 26; 1 male, 1 female, Pichilinque Bay, March 28–30; 4 females,

Mulege, April 5; 2 males, 1 female, Concepcion Bay, April 7-8; 1 female, San Bernado Mountains, May 15; 1 juv., Miraflores, April.

40. Peromyscus eremicus eremicus Baird. Desert Mouse.

Female, San Francisquito Bay, April 10.

# 41. Peromyscus eremicus tiburonensis Mearns. Tiburon Desert Mouse.

Two males, 1 female, Tiburon Island, April 12-13.

42. Peromyscus guardia sp. nov. Angel Island Mouse.

Larger than *eremicus*, in color at least as pale; upper outline of skull less arched; skull similar in general to that of *eremicus*, but zygoma more compressed anteriorly and rostrum decidedly longer. Incisive foramina rather short, not reaching anterior plane of first molars; interpterygoid fossæ broader; audital bullæ larger.

Type No. 31907 female.

Measurements: average of two specimens, total length, 208; tail, 114; hind foot, 24.

Represented by male and female from Angel de la Guardia Island, April 11.

### 43. Peromyscus stephani sp. nov. San Esteban Island Mouse.

Although near to Tiburon Island, the San Esteban form is clearly not very nearly related to *P. tiburonensis*. In color it is close to typical *eremicus*; the tail averages shorter and the hind foot larger.

P. tiburonensis is one of the smallest of the eremicus group, while the San Esteban form is one of the largest, skull decidedly shorter than in eremicus, dentition about the same; nasals more pointed posteriorly and reaching beyond premaxillaries. In eremicus the contrary is true—the premaxillaries exceed the nasals. Posteriorly the frontals meet at an angle on the median line, instead of forming a curve as in eremicus.

Type, No. 31961, male.

Measurements, average of four specimens: total length, 195; tail, 97; hind foot, 22.

Represented by 2 males and 2 females, San Esteban Island, April 14.

# 44. **Peromyscus eremicus carmeni** subsp. nov. Carmen Island Desert Mouse.

Generally similar to *P. e. eva*, but back rather grayer and general color less rufescent, under parts more creamy white. Specimens vary from white to creamy white beneath; foot larger; teeth larger and tooth-row longer.

Type No. 31885, male.

Measurements, average of 12 specimens: total length, 197; tail, 111; hind foot, 22.

Represented by 5 males, 7 females, Carmen Island, April 13.

SCIURIDÆ. SQUIRRELS, SPERMOPHILES, ETC.

Antelope squirrels were observed at three localities only. We did not see them at any point on the west side of the Peninsula. All specimens were obtained by shooting.

45. Ammospermophilus leucurus insularis Nelson and Goldman. Espiritu Santo Island Spermophile.

Three males, 1 female, 2 skulls, Espiritu Santo Island, April 19.

46. Ammospermophilus leucurus peninsulæ Allen. Lower California Spermophile.

Five males, 1 female, Cape San Lucas, March 24; 1 skull, Agua Verde Bay, April 22.

VESPERTILIONIDÆ. INSECTIVOROUS BATS.

Bats were not much in evidence during our explorations, as we were seldom ashore in the evening. The specimens with one exception were obtained in the interior by a collector sent from the ship.

Several species are known to inhabit Lower California.

47. Pipistrellus hesperus australis Miller. Allied Bat.

One female, Ceralbo Island, April 19.

48. Dasypterus ega xanthinus Thomas. Sierra Laguna Bat.

Two specimens, Miraflores, May 7.

49. Antrozous pallidus minor Miller. LITTLE COMONDU BAT.

Three specimens, Miraflores, May 1-3.

50. Myotis peninsularis Miller. Lower California Bat.

Five specimens, Miraflores, May 1-6.

#### PHOCIDÆ. SEALS.

One of the most interesting features of the expedition was the rediscovery of the elephant seal at Guadalupe Island, lying 140 miles west of the northern part of the Peninsula. This species was formerly taken in great numbers for its oil, and finally became so scarce that it was reported by Scammon in 1869 to be "nearly if not quite extinct." Specimens were taken by the writer in 1884 at San Cristobal Bay, Lower California, since which time it has not been seen at that locality. He also obtained specimens in 1892 at Guadalupe Island where it has been found subsequently only twice. Not having been found elsewhere than at these two localities since about 1865, it has generally been supposed to be extinct. The herd at Guadalupe Island contains about 150 animals, and is now being protected by the Mexican Government. The writer has already published a special account of the elephant seal in 'Zoologica, Scientific Contributions of the New York Zoological Society', I, No. 8, pp. 159-173, pll. 52-72, April, 1912. He has also published an article on the same subject in the 'Century Magazine' for June, 1912, pp. 205-211.

### 51. Macrorhinus angustirostris Gill. Northern Elephant Seal.

#### Plate VIII.

Three males, 1 female, skins, 2 skeletons, 6 live yearlings, Guadalupe Island, March 2-4.

Some of the young brought back lived nearly a year in the New York Aquarium. The skins of the adults with some of the young have been mounted for the American Museum of Natural History.

### OTARIIDÆ. SEA-LIONS, FUR-SEALS.

Sea-lions abound at many points on the Peninsula and the outlying islands, from Guadalupe Island, 140 miles west of the northern part of the Peninsula, to Consag Rock, near the head of the Gulf of California.

The California species has not been recorded from farther south than the Tres Marias Islands, below the mouth of the Gulf. The largest colony observed during the cruise occupied the western side of West San Benita Island, where there were perhaps 1000 hauled out on the rocks. All the little inlets on the eastern side of the East San Benita were filled with them, there being about 700 altogether.

A brief search was made for fur-seals at Guadalupe Island, and a very thorough one at the San Benita Is'ands, but none were found. The breeding season, it is said, does not commence until June. Doubtless there are some survivors about Guadalupe, where they were taken as late as 1894. At this island they frequented the numerous sea-caves under the cliffs. (Plate VIII.

52. Zalophus californianus Lesson. California Sea Lion.

One shot at Cedros Island, not saved.

53. Arctocephalus townsendi Merriam. Lower California Fur-Seal.

This species has not been seen since 1894. There are no specimens in museums with the exception of those collected by the writer in 1892. There are incomplete records showing that 5575 fur-seals were killed at Guadalupe and San Benita Islands between 1876 and 1894.

MUSTELIDÆ. SKUNKS, WEASELS, ETC.

54. Spilogale lucasana Merriam. CAPE SAN LUCAS SPOTTED SKUNK.

Three specimens, Miraflores, May 2, 18, 19.

Spotted skunks of this or allied species are found in most parts of Lower California, where the inhabitants generally fear them, believing that the bite of a "zorillo" causes rabies.

PROCYONIDÆ. RACCOONS, ETC.

55. Procyon psora pallidus Merriam.

Male, female, Miraflores, April 24 and May 10.

CANIDÆ. WOLVES, FOXES, ETC.

The coyotes from San Bartolome and Tiburon were all obtained by leaving poisoned baits on the beaches at night. Foxes and coyotes appear to inhabit all parts of the Peninsula, and fox tracks were seen on Cedros Island.

56. Urocyon cinereoargentatus californicus Mearns. California Gray Fox.

Two females, Miraflores, May 2-8.

57. Canis peninsulæ Merriam. Lower California Coyote.

Two males, 1 female, San Bartolome Bay, March 14.

58. Canis jamesi sp. nov. Tiburon Island Wolf.

### Plate IX.

Much paler than *C. mearnsi*, and nearer *C. estor*, the desert coyote, but of a richer color and a little more buff; ears long, skull large, nearly equalling that of the type of *estor*; teeth larger and heavier than in either *mearnsi* or *estor* — about equalling those of *lestes*; bullæ rather flattened, closely resembling those of *C. lestes*.

Type No. 31987, male, Tiburon Island, April 13.

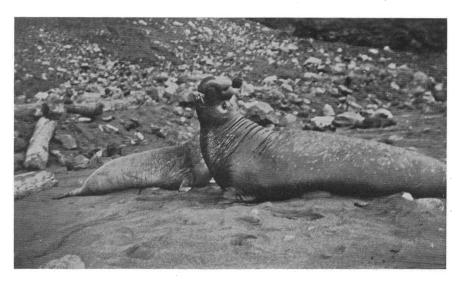
Measurements of the type: total length, 1143; tail vertebræ, 330; hind foot, 330; ear from crown, 118.

Named for Mr. Arthur Curtiss James of New York, through whose generosity the Museum was enabled to cooperate in the expedition of the 'Albatross' to the Gulf of California.

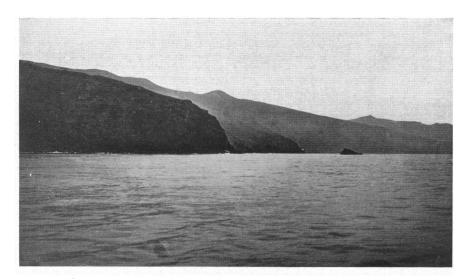
#### FELIDÆ. CATS.

59. Lynx ruffus californicus Mearns. California Lynx.

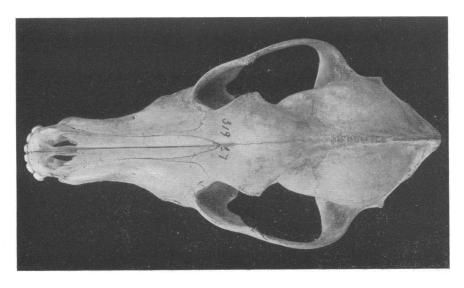
Male, Miraflores, May 21.

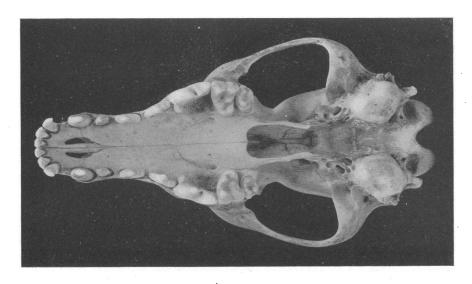


1. Adult male and female Elephant Seal ( $\it Macrorhinus angustirostris$ ). Guadalupe Island, L. Cal.



2. View of northwest side of Guadalupe Island, L. Cal. Small beach at extreme left occupied by Elephant Seals in 1911. The rocky point in center is where Fur Seas were found in 1892.





Skull of Tiburon Island Wolf (Canis jamesi).