November 26th.

The President, Dr. Hays, in the Chair.

Thirty-three members present.

The following gentlemen were elected Correspondents:

Mr. W. S. Bingham, of Boston; Prof. O. Root, of Utica, N. Y., and Col. E. Jewett, of Utica, N. Y.

The following were elected Members:

Messrs. Edw. R. Murphy, Lloyd P. Smith, F. A. Hassler, G. Y. Shoemaker and Matthew Newkirk.

On favorable report of the Committee, the following paper was ordered to be published:

Notes on a Collection of MAMMALS from Arizona.

BY ELLIOTT COUES, M. D., U. S. A.

Circumstances have unavoidably delayed, until now, the preparation of the present article, needed to complete the record of the zoological collections made by the writer in Arizona during 1864 and 1865. Articles upon the Coleoptera, by Dr. J. L. Le Conte; upon the Batrachia and Reptilia, by Prof. E. D. Cope; upon the Cheiroptera, by Dr. H. Allen; and upon the Birds, by the present writer, have already appeared in these Proceedings. The few fishes collected were unfortunately destroyed in transitu. The plants, collected jointly by Dr. E. Palmer and the writer, still remain in the hands of Dr. Geo. Engelmann, of St. Louis, to whom they were transmitted for examination and identification. These collections, taken together, may be considered to represent, in a measure, the more prominent features of the fauna and flora of the Territory.

The classification and nomenclature here adopted is that of Prof. Baird's "Mammals of North America" (Pacific Railroad Report, vol. viii.) A general sketch of the Quadrupeds of Arizona, by the present writer, has already appeared in the "American Naturalist," vol. i., Nos. 6, 7, 8 and 10.

CHEIROPTERA.

VESPERTILIONIDÆ.

1. Vespertilio subulatus, Say.
Several specimens. An abundant and generally distributed species.

2. Vespertilio macropus, n. s., Allen, Pr. A. N. S., Phila., Aug., 1866, p. 288.
One specimen, Colorado Desert, near Fort Mojave; taken in broad daylight, as it was capturing insects over a small pool.

3. Antrozous pallidus (Le Conte), Allen.
Several specimens. An abundant species in the Colorado Valley and southern portions of the Territory; particularly numerous at Fort Yuma.

Other species of this family, found in Arizona, according to Dr. Allen, are: *Lasiurus cinereus*, *Vespertilio lucifugus*, *V. evotis*, *V. nitidus*, and *Corynorhinus macrotis*.

CARNIVORA.

FELIDÆ.

4. Felis concolor, Linn.
One specimen, a fine hunters' skin, measuring 6½ feet from tip to tip. This animal is generally distributed, but of rather unfrequent occurrence.

5. Lynx rufus, Rafinesque, var. *maculatus*.

Several specimens. Of frequent occurrence, particularly in the vicinity of Fort Whipple.

CANIDÆ.

6. Canis latrans, Say. (*C. frustror*, Woodhouse.)

Numerous specimens. The most abundant of the larger mammals of the Territory, and very generally distributed. It is particularly numerous in the vicinity of the settlements, and very annoying. Numbers may be readily destroyed by poison, as is frequently done. The pelage in winter is fuller and softer than in summer, and chiefly black and grayish-white, losing the tawny and rufous which it has in the latter season. Reproduction occurs in May or June, five or six young being ordinarily brought forth, in rocky, secluded places. The species is frequently precluded from indulging its carnivorous tastes, and compelled to subsist, in great measure, upon fruits and berries.

7. Canis occidentalis, Rich., var. *griseo-albus*.

Several specimens, taken at Fort Whipple in winter, are referrible to this variety. The skins make very beautiful robes. No black or tawny individuals were observed. The species is generally distributed over the Territory, though by no means so abundant as the preceding.

8. Vulpes virginianus, Richardson.

Three examples. The species is of common occurrence. No red foxes were met with. *V. macrourus* and *V. velox* may possibly be found in the Territory.

URSIDÆ.

9. Ursus horribilis, Ord.

One specimen, a quarter-grown cub, killed with its dam in the San Francisco Mountains. The species is of common occurrence in that locality.

RODENTIA.

SCIURIDÆ.

10. Sciurus Abertii, Woodhouse.

S. dorsalis, Woodhouse. (Pre-occupied.)

S. castanonotus, Baird. (Without ear-tufts.)

Three specimens, San Francisco Mountains. A large and very beautiful species, abundant, and a characteristic of the pine-covered mountainous portions of the Territory.

11. Sciurus Arizonensis, n. s., Coues, Am. Naturalist, i., 1867, p. 357.

One specimen, Fort Whipple, Dec. 20, 1865; type of the species as described l. c. No other examples met with. A gray squirrel, resembling the common Eastern species, but smaller, the tail longer and broader, and distinctly tricolor below.

In addition to the two preceding species *S. Frémontii*, Aud. and Bach., is believed to occur; and *S. fossor*, Peale, from California, may possibly reach the Colorado Valley.

12. Tamias dorsalis, Baird.

Numerous examples. An abundant species throughout the Territory. Closely allied to, but readily distinguishable from the other recognized species. It lives chiefly, or wholly, in rocky, broken localities.

13. Spermophilus Beecheyi, Cuvier.

Two examples. This species ranges into Arizona from California, but is there by no means so abundant as in the last mentioned region, where, in a measure, it represents the prairie dog of the plains, both in numbers and in habits, and proves a great pest to the farmers.

Other Arizonian *Spermophili* are: *S. grammurus*, Say, in the southern portions; *S. tereticauda*, Baird, in the lower Colorado Valley; *S. Harrisii*, Aud. and Bach.; and probably also *S. lateralis*, *spilosoma*, *Mexicana*.

14. Cynomys Gunnisonii, Baird.

One specimen, taken near the San Francisco Mountains, July, 1864. This rare species was there found living in colonies like those of *C. ludovicianus*, only of smaller extent. The general habits of the two appeared very similar.

15. Castor canadensis, Kuhl.

Although no specimens of this animal were actually collected, it was frequently seen, and is included here for the purpose of remarking upon its great abundance on nearly all the streams of the interior of the Territory. Its present numbers are doubtless owing to the fact that, of late years, it has been but little, if at all, molested by trappers, whom Indian hostilities have prevented from penetrating to its haunts.

SACCOMYIDÆ.

16. Thomomys fulvus (Woodh.) Baird.

Two specimens, Fort Whipple. The most abundant and characteristic species of the subfamily Geomyinæ, and generally distributed over northern and central Arizona. It is almost wholly subterranean and nocturnal in habit. The small piles of soft, moist earth, seen all over the fertile grassy portions of the Territory, are thrown up by this animal in digging or extending its burrows; and are particularly numerous in the vicinity of clumps of oak. Two other species, *T. bulbivorus* and *T. umbrinus* probably occur in southern and western Arizona.

17. Dipodomys Ordii, Woodhouse.

Numerous specimens of this very abundant animal, the "kangaroo rat" of the inhabitants; from Fort Whipple and vicinity. This species seems susceptible of a semi-domestication, like the true *Mures;* and, together with a species of *Hesperomys*, is very common in the storehouses and granaries of Prescott and Fort Whipple, where they readily produce their young. Ordinarily it lives in brush heaps, under fallen logs, etc., as well as under ground. The young are brought forth in May and June; but two or more litters may be produced, especially when the animals are living in places protected from the weather. The young are at first nearly gray, showing little of the clear fawn of the adults. The ordinary mode of progression with these animals is the same as that of other small rodents; but the movements upon all-fours are changed to a series of vigorous leaps when the animals are alarmed.

18. Perognathus flavus, Baird.

One specimen (Fort Whipple) of this rare and diminutive rodent. Two other species, *P. parvus* and *P. penicillatus*, also occur.

MURIDÆ.

MURINÆ. (*Sigmodontes.*)

19. Hesperomys eremicus, Baird.

Numerous specimens, both old and young, determined to be this species by Prof. Baird. It is the characteristic species of the vicinity of Fort Whipple, where it is semi-domesticated, and, in a measure, plays the part of the house mouse, living and breeding in numbers in buildings. Several other closely allied species of this difficult genus probably also occur, as well as one or two of the genus *Reithrodon*.

20. Neotoma mexicana, Baird.

Several examples. A very common species throughout the Territory, living indifferently under ground or rocks, in brush heaps, or in low scrubby trees. It is an important article of food with the Indians.

Among the true *Mures*, or "Old World rats," two species have been imported into the settlements along the Colorado River, *Mus decumanus* and *M. musculus*. Apparently, however, they have as yet hardly penetrated to the interior of the Territory.

ARVICOLINÆ.

21. Arvicola ——— ?

Fragments of an undetermined species, taken from the stomach of a large hawk, shot at Whipple. The genus appears to be very poorly represented in the number of its individuals as well as of its species.

22. Fiber zibethicus, Cuvier.

Skins, sewn together to make arrow-cases, taken from the Apaché Indians. The species seems to be common on some of the waters of the Territory.

LEPORIDÆ.

23. Lepus callotis, Wagler.

Three specimens, Fort Whipple. The "jackass rabbit," as the species is called, is very abundant throughout the Territory. Believed to be the only large hare ascertained to inhabit the Territory, though the occurrence of one or two other species, particularly *L. Californicus*, may be anticipated.

24. Lepus artemisia, Bachman.

One specimen, Beall's Springs, Western Arizona. A very abundant species throughout the Territory. In the northern portions, at least, it changes its pelage somewhat in winter, losing in great measure the tawny or fulvous, and becoming of a grayish hue, with some parts nearly white. Such a change has not been observed to take place with *L. callotis*.

25. Erethizon epixanthus, Brandt.

One specimen, from the Colorado Chiquito, a locality where the species seems to be particularly abundant.

RUMINANTIA.

CERVIDÆ.

26. Cervus macrotis, Say.

One skin of a doe, taken in October, when the summer coat has been replaced by that of winter. The latter is thicker and fuller, and of a much more uniform mouse-gray. At this season the antlers of the males are well-grown. They differ in some essential points from those of *C. virginianus*. These deer inhabit the open woods and chapparal. A second species, known to hunters as the "white-tailed deer," occurs, but rarely. The black-tailed still continues to be very abundant in all situations suited to its habits; and its flesh and hide are important items in the domestic economy of both settlers and Indians.

27. Antilocapra americana, Ord.

Several pairs of horns, and skins of the head, stuffed by the Indians to be used as decoys. Both the present species and the black-tailed deer are hunted by the Indians by this means. One pair of horns, taken near Fort Whipple, are remarkable for the great breadth of the prong, which springs from the extreme base of the shaft, and for the unusual degree of apical curvature of the latter; the tip being bent over until it points directly toward the base of the horn, and its axis is brought quite parallel with that of the upright portion. The antelope is still common on all the open plains of the central and northern portions.

28. Ovis montana, Cuvier.

Horns of this species were often met with about the bases of cliffs and precipices. The animal appears to be much less abundant now than formerly, and only inhabits the most rugged and inaccessible mountainous regions.

The buffalo (*Bos americanus*,) which formerly inhabited the Territory, has for many years been quite extinct.