

situations in Central Asia, *F. pajeros* in the pampas of S. America, *F. caracal* and *Acinonyx jubatus* in the sandy or grassy plains of Africa and tropical Asia. All of these species have a comparatively high partition and large outer chamber. On the other hand, *Panthera pardus* and *onca*, *Felis pardalis*, *nebulosa*, *marmorata*, *aurata*, and others with a very low partition and small outer chamber are essentially dwellers in thick forest. *F. concolor*, however, is apparently exceptional. In the skulls examined the partition is as low and the outer chamber practically as small as in the typical forest and jungle species. Nevertheless, this cat, as is well known, lives both in swampy jungles and in high rocky hills. I have not seen sufficient numbers of skulls to know whether or not there is any variation in the bulla according to the habitat; but in view of the above-mentioned facts, I should infer that the puma has comparatively recently adapted itself to open-country conditions.

This brief enumeration of the main facts is sufficient to establish some interesting conclusions. First, that within the limits of the species, or genera, of Felidæ intergradation exists in the size and position of the partition and the relative capacity of the two chambers of the bulla. Second, that the structure of this part of the skull cannot by itself be regarded as evidence of affinity between species, as is shown by the similarity between such evidently unrelated forms as *Felis manul* and *F. pajeros* and *Uncia uncia*. Third, that species which for other reasons must be regarded as allies—namely, those belonging to *Felis*, in a restricted sense of the word (such as *sylvestris*, *ocreata*, *chaus*), and the lynxes (*L. lynx*, *canadensis*, and *caracal*)—have bullæ of a similar type, varying a little according to the species.

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XXXIX.—*Two new Species of Akodon from Argentina.*  
By OLDFIELD THOMAS.

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*Akodon dolores*, sp. n.

A rather large coarsely lined brown species.

Size about as in *A. obscurus*. General colour a uniform pale olive-brown (darker than "drab" of Ridgway, paler than "olive-brown"), not nearly so olivaceous as in *arenicola*



and its allies, rather coarsely lined on the back with the ends of the darker hairs. Under surface washed with pale drabby whitish, the bases of the hairs slate. Head uniform with back. Eyes with narrow buffy rims. Ears brown. Hands and feet dull whitish. Tail well-haired, bicolor, blackish brown above, dull whitish below, but the contrast not strongly marked.

Skull of somewhat similar build to that of *A. obscurus*, stout, rather strongly bowed, with broad interorbital region, the edges of which are square but not beaded or ridged. Palatal foramina well open. Posterior nares narrow. Incisors rather more turned back than usual, but there is some variation in this respect, the angle with the tooth-row in one specimen only  $66^{\circ}$ , while in others it rises to  $74^{\circ}$ ,  $75^{\circ}$ ,  $79^{\circ}$ , and  $80^{\circ}$ , a range of variation quite unusual; but the first specimen is probably abnormal.

Dimensions of the type (measured in flesh):—

Head and body 116 mm.; tail 89; hind foot 23 (range from 20); ear 17.

Skull: greatest length 29; condylo-incisive length 27.8; zygomatic breadth 15.2; nasals 10.7; interorbital breadth 5.1; breadth of brain-case 12.2; palatilar length 12.8; palatal foramina 7.2; post-foraminal palate 4.2; upper molar series (worn) 4.8.

*Hab.* Yacanto, near Villa Dolores, south-western slopes of the Sierra de Cordova. Alt. 900 m.

*Type.* Old male. B.M. no. 16.1.6.38. Original number 2536. Collected 19th November, 1915, by R. Kemp. Presented by Oldfield Thomas. Five specimens.

This well-marked species looks as if it were allied to *A. obscurus* and *lenguarum*, but its incisors are markedly less thrown outwards. Its skull is perhaps most like that of *A. varius*, from which, however, as from all the others, it is readily distinguishable by its uniform pale brown colour.

*Akodon simulator*, sp. n.

Allied to *A. varius*, but with the coloration of members of the *longipilis-hirtus* group (genus *Abrothrix* of the succeeding paper).

Size fairly large. Fur long, hairs of back about 9–10 mm. in length. General colour dark greyish, strongly suffused on the back with "clay-colour"; head, shoulders, flanks, and hips slaty or purplish grey. Under surface washed with buffy or drabby whitish, the basal seven-eighths of the hairs dark slaty; chin prominently contrasted white, the hairs



white to their bases. Hands and feet grey. Tail blackish brown above, whitish below.

Skull very like that of *A. varius*; interorbital region not quite so broad, similarly square-edged, without definite ridges. Incisors slightly more slender.

Dimensions of the type:—

Head and body 98 mm.; tail 79; hind foot 24; ear 18.

Skull: greatest length 28·5; condylo-incisive length 27; zygomatic breadth 14·7; nasals 10·2; interorbital breadth 4·6; breadth of brain-case 12·2; palatilar length 12·6; palatal foramina 7; post-foraminal palate 4; upper molar series 4·9.

*Hab.* Tucuman. Type from Villa Nougues, San Pablo. Alt. 1200 m.

*Type.* Adult male. B.M. no. 2. 1. 5. 8. Original number 1365. Collected 22nd September, 1901, by L. Dinelli. Presented by Oldfield Thomas. Six specimens.

While this species resembles *A. varius* in the buffy or clay-colour of the dorsal suffusion, it differs by the contrasted grey of the head, shoulders, flanks, and hips, which give it a deceptive resemblance to the species of *Abrothrix*. But there is no doubt that its nearest relationship is with the first-named animal. Its peculiar white chin is unique, but I should not lay very much stress on this character, which may easily prove variable.

XL.—*The Grouping of the South-American Muridæ commonly referred to Akodon.* By OLDFIELD THOMAS.

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IN his 'Mammals of Patagonia' Dr. J. A. Allen has drawn attention to the composite nature of what is usually called *Akodon*, and has indicated one or two groups which he thinks ought to be generically or subgenerically distinguished—for example, those named below *Chalcomys* and *Chræomys*.

I have now had an opportunity to examine the whole group, which I find—uniform as it is in essential characters, and notably in the hypsodontism and general structure of the teeth—may be subdivided into seven genera. Of these, three—*Akodon*, *Abrothrix*, and *Zygodontomys*—were previously provided with names, while four need new ones. Two of these four are inhabitants of the Andean plateau and two of the lowlands of Brazil. A special subgenus is also made for *A. ærosus*, *A. urichi*, and their allies.



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