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TWO NEW SQUIRRELS FROM COSTA RICA

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Collections recently secured by Mr. C. F. Underwood in the mountains of north central Costa Rica include a new species of small tree squirrel, with an unusual combination of characters, and an undescribed race of pygmy squirrel. Previously only two Costa Rican pygmy squirrels have been recognized, with type localities in the lowlands of the east and west coast regions. Specimens coming from the central highlands, as might be expected, represent a new race. Acknowledgment is due for the loan of comparative material to the U. S. National Museum, Museum of Comparative Zoölogy, and Museum of Zoology of University of Michigan.

Sciurus poasensis, new species

TYPE.—No. 131723, Amer. Mus. Nat. Hist., adult ♂; Volcano Poas, altitude 6700 feet, Province Alajuela, Costa Rica; collector, C. F. Underwood, May 26, 1938. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—A rather small dark colored squirrel, intermediate in size between *Microsciurus alfari* and *Sciurus deppei* and equal in size to *Syntheosciurus brochus*; tail bushy, about equal to length of head and body and colored similar to back; ears low, rounded, well haired inside and out to tip; pelage long, soft and full with thick underfur; no distinct line of demarcation between colors of upper and underparts and no postauricular patches; pads of feet white. Incisor teeth slender, projecting forward, anterior surface smooth; upper premolars two on each side.

DESCRIPTION.—Color of entire upperparts, including top of head, ears, sides of body and outside of fore and hind limbs and feet, finely mixed cinnamon buff and black, darkest on head and down middle of back; the thick underfur dark plumbeous with a subterminal band or tipped with cinnamon buff; the coarse hairs entirely black or with one or two subterminal bands of cinnamon buff; tail similar to back, fringed along sides with rather reddish cinnamon buff, the hairs ochraceous buff with a subbasal and subterminal band of black and mixed with a few black hairs. Ring around eye and sides of nose, rich cinnamon buff; a narrow area in in-

guinal region washed with bright ochraceous tawny; inside of hind limbs similar to sides of body; feet rather browner than back. Skull small with a narrow slender rostrum; premaxillaries abruptly tapered anteriorly; postorbital processes slender; upper incisors long, slender, projecting forward, and not curved under, anterior surface smooth; molar teeth as in *Microsciurus*; a small peg-like premolar present and placed as in *S. deppei*; audital bullae small; nasals long and slender, terminating posteriorly on a line with the posterior border of the premaxillaries and constricted near base, their posterior border only slightly emarginate. Posterior palatine foramina well behind a line across the middle of second molars; posterior border of palate broad, evenly rounded and without central process; spheno-palatine foramina very large.

MEASUREMENTS.—Head and body, 155 mm.; tail vertebrae, 140; hind foot, 40 s.u. (in dried skin including claws, 43.7); ear, 16. Skull: condylobasal length, 38.7; palatal length, 20.6; length of nasals, 12.7; zygomatic width, 24.8; interorbital width, 12.4; width of palate across m^2 , 10.1; length of upper molar series, 7.4.

Mr. Underwood met with this remarkable new squirrel once only. He took an individual on the forested slopes of the Volcano Poas. Judging by the long dense fur it is evidently an animal of high elevation. It does not have very close relationship with any of its near geographical neighbors and combines characters of at least three genera of Central American squirrels. Its resemblance to *Syntheosciurus brochus* from Boquete, Panama, in both external and cranial characters is remarkable. The absence of a long longitudinal median groove on the upper incisors, present in *Syntheosciurus*, separates it from that genus. Except for its smaller size, the general outline of the skull and the coloration of the body *poasensis* is not unlike *deppei*. The slender projecting incisors and small molar teeth, the uniform coloration of body and tail and the well haired ears are *Microsciurus* characters.

***Microsciurus alfari alticola*,**
new subspecies

TYPE.—No. 140388, Amer. Mus. Nat. Hist.; adult ♂; Lajos, Villa Quesada, altitude 5000 feet, Province Alajuela, Costa Rica; collector, C. F. Underwood, January 5, 1942. The type is a skin and skull in good condition. Besides the type there is one paratype with a fragmentary skull and one immature topotype.

GENERAL CHARACTERS.—Somewhat larger than *M. a. alfari* and *M. septentrionalis* and with pelage much longer, fuller and more woolly than either. Skull of the *alfari* type but approaching *septentrionalis* in the posterior elongation of the palate; nasals relatively long and emarginate.

DESCRIPTION OF THE TYPE.—General color of upperparts including top of head, sides of body, ears and limbs, dark olive drab, the fur plumbeous from base for most of its length and tipped with light ochraceous buff; the longer and coarser hairs glossy black with a subterminal band of light ochraceous buff; sides of head grading to pale ochraceous tawny mixed with black on cheeks and nose; fore and hind feet ochraceous tawny. Underparts lightly washed with warm buff; tail mixed pale ochraceous tawny and black, the hairs with alternate bands of each color; tip of tail black. Skull: moderately large with high braincase, broad interorbital region, relatively long slender rostrum; nasals slender, posterior border emarginate and extending backward to the posterior border of premaxillaries; jugal narrow; posterior border of palate extending backward well beyond the plane of the last molars and drawn out to a point. The skull in general is similar to that of typical *alfari* but differs notably in the extension of the posterior border of the palate

and the narrower and more slender jugal. It approaches *septentrionalis* in the characters of the palate and jugal but differs from the latter in having longer and emarginate nasals; in *septentrionalis* the nasals are truncate and shorter than the premaxillaries.

MEASUREMENTS.—Type (topotype in parentheses): total length, 248 mm. (250); tail vertebrae, 118 (113); hind foot, 39 (40); ear, 14 (14). Skull: occipito-nasal length, 36.9; condylobasal length, 32.1; palatal length, 16.6; length of nasals, 10.8; zygomatic width, 21.7; width of braincase, 18.5; interorbital width, 13.9; length of maxillary toothrow, 5.45 (5.6).

Microsciurus alfari alticola is a highland race with long dense fur. In color it is nearest to the type of *M. septentrionalis* from Sabolas in the lowlands of southern Nicaragua but is readily distinguished from the latter by the longer and more woolly pelage. Externally it needs no comparison with *alfari* which is a relatively close haired race with rich rufescent coloration. The type of *alfari* was collected January 24, 1894, at Jeminez in the eastern lowlands of Costa Rica, at an elevation of less than 1000 feet. There is nothing on the type label to indicate that it came from Volcan Turrealba which seems to be generally associated with *alfari*, indicating that it is a highland race. Specimens in the University of Michigan collection from La Hondura, 4000 feet, and La Viega, 1200 feet, are referable to *alticola*, though not typical.