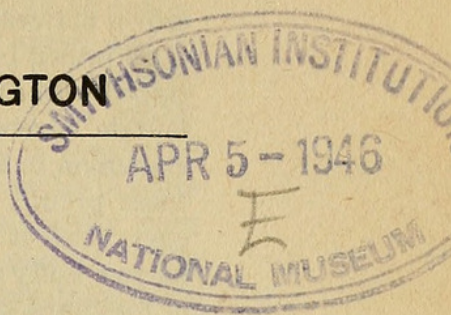


PROCEEDINGS  
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THREE NEW MAMMALS FROM THE PEARL  
ISLANDS, PANAMA.

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During the year 1944, Dr. A. Wetmore, Secretary of the Smithsonian Institution, and J. P. E. Morrison of the Division of Mollusks procured a large number of zoological specimens for the collections of the United States National Museum on San José Island. Ten kinds of mammals were represented in their collections and among these are three apparently undescribed forms.

*Mazama permira*, sp. nov.

*Type locality*.—Isla San José, Archipielago de las Perlas, Golfo de Panama, Panama.

*Type specimen*.—Male adult, skin and skull; No. 277144, U. S. National Museum; collected September 24, 1944, by C. F. Jones, W. N. Collins and Robert Carder; original number 50.

*Distribution*.—Known only from the type locality.

*General characters*.—Ground color of upperparts mixed natal brown and cinnamon, with bone brown streak from shoulders to base of tail; underparts whitish in contrast to reddish or fawn colored chest and anterior part of abdomen of *Mazama sartorii repericia*. Incisive foramina shorter and wider, lachrymal vacuities much smaller and narrower, nasals more noticeably widened laterally above lachrymal vacuities, and skull as a whole smaller and narrower than in *repericia*.

*Color* (terms after Ridgway, Color Standards and Color Nomenclature, 1912).—Upperparts in general a mixture of natal brown and cinnamon, with broad median bone brown streak from shoulders to base of tail, and grading into wood brown on lower sides; individual hairs light drab at base grading gradually into natal brown, with cinnamon subapical band and blackish tip; broad cinnamon buff streak below eye and wider supraorbital streak of same color extending more than half way to

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ear, and forming lateral border to crown patch; hair on forehead and crown noticeably longer and darker than on sides of head and neck, near bone brown in color, but with hairs on hinder borders of crown broadly tipped with cinnamon or cinnamon buff; upper lip whitish near nasal pad; muzzle covered with short whitish tipped hairs, with small rounded cinnamon buff patch on side adjacent to nasal pad, but becoming darker (near prout's brown) on snout behind nasal pad as well as in front of eyes; sides of face and neck near drab color, the individual hairs having narrow buffy subapical bands; ears dull dark brownish; exposed surfaces of forelimbs similar in color to neck, becoming more mixed with cinnamon buff hairs on lower portions of limbs and with inner surface lighter to base of hoof; exposed surfaces of hind limbs similar in color to forelimbs, the white of underparts extending downward along inner surface of hind limb as a narrow stripe, gradually disappearing below middle of metatarsal; tufts on tarsal glands mixed natal brown and cinnamon, with cluster of shorter white hairs in center; chin whitish grading into light avellaneous on throat; under surface of neck similar in color to sides of face; drab colored bases of the white and cinnamon buff tipped hairs showing through on brisket in front of forelimbs; rest of underparts whitish; upper surface of tail rusty, near hazel in color, above, white below, with white tip.

*Skull*.—Smaller and narrower than that of *Mazama sartorii reperticia*. Anterior frontal region convex and somewhat elevated; nasals noticeably widened laterally above lachrymal vacuities and but slightly encroached on by these vacuities; lachrymal vacuities small and narrow; incisive foramina short and wide; premaxillary portion of rostrum noticeably attenuated anteriorly; ventral surface of bulla somewhat pyramidal in outline. Width across jugal portion of orbit noticeably less and maxillary tooth row shorter than in *reperticia*.

*Measurements*.—*Type*: Total length, 1060 mm.; tail, 85; hind foot, 245; height at shoulder, 570; height at hip, 590. A female topotype: Total length, 1000; tail, 80; hind foot, 250.

*Skull (type)*: Greatest length, 178; condylobasal length, 171; width across orbit at fronto-lachrymal suture, 43; maximum width across jugal portion of orbit, 76.8; zygomatic width, 74.7; length of nasals, 53.5; maximum width of nasals posteriorly, 23.2; maximum width of nasals anteriorly, 14.5; maxillary tooth row, 51; maximum distance across maxillary tooth rows (outside measurement), 57; length of mandible, 142.5; lower cheek tooth series, 54.5. One male and one female topotype, respectively: Greatest length, —, 163.3; condylobasal length, —, 157.3; width across orbit at fronto-lachrymal suture, 38, 38.8; maximum width across jugal portion of orbit, 71, 69; zygomatic width, 68.5, 68.5; length of nasals, 43.5, 42.5; maximum width of nasals posteriorly, 22.3, 20; maximum width of nasals anteriorly, 11.5, 11.5; maxillary tooth row, 52.2, 54; maximum distance across maxillary tooth rows (outside measurement), 54.5, 53.5; length of mandible, 129, 128; lower cheek tooth series, 54.7, 56.5.

*Remarks*.—The specimen selected for the type is an old male, which

apparently suffered severe injuries at one time in fighting with an opponent. Consequently, the skull is not complete. The left antler and its osseous base were broken off, resulting in the destruction of the posterior upper border of the orbit and the adjacent upper portion of the postorbital bar. The wound, however, healed over, leaving a roughened irregular surface on the left side of the skull. The right antler is quite slender and short, not more than 50 mm. in length. The slightly worn permanent dentition is in place and the left upper canine is present. The hinder upper surfaces of the skulls of both adult males are irregularly pitted, which may indicate rickets, resulting from overcrowding or inadequate diet on this small island. The skull of the second male, which likewise has the permanent dentition, lacks both premaxillaries and is incomplete in other respects. The skull of the female may not be fully adult, although the permanent dentition is in place. It will be noted from the measurements that the maxillary tooth row of this female is actually longer than that of either of the males. The coloration of this brocket is quite different from that of *Mazama sartorii* and *M. s. reperticia*, the ground color of the upperparts being natal brown in contrast to these reddish forms. Furthermore, the underparts of *permira* are whitish in contrast to the reddish or fawn colored chest and anterior abdomen of *reperticia* and *sartorii*.

*Specimens examined*.—Total number, 5 (including 2 fawns), from the type locality.

***Dasyprocta punctata bellula*, subsp. nov.**

*Type locality*.—Isla San José, Archipelago de las Perlas, Golfo de Panama, Panama.

*Type specimen*.—Male adult, skin and skull; No. 277152, U. S. National Museum; collected May 11, 1944, by J. P. E. Morrison; original number 29.

*Distribution*.—Known only from the type locality.

*General characters*.—Closely allied to *Dasyprocta punctata callida* of Isla del Rey [San Miguel Island], but darker and not so yellowish above (the subapical band on hairs of back and sides varying from mustard yellow to ocher in *callida*) and the hairs on the underparts have grayish white instead of buffy tips. Differs from *Dasyprocta punctata dariensis* on the mainland in smaller size, especially the smaller foot, and the notably duller coloration of the upperparts. Skull and bullae much smaller than in *dariensis* although the transverse diameter of the anterior-most upper cheek tooth is approximately the same in both forms.

*Color* (terms after Ridgway, Color Standards and Color Nomenclature, 1912).—Hairs on snout and top of head dusky drab basally with subapical warm buff band and black tip; crown of head distinctly darker than snout because of elongation of black tips; hairs on top and sides of neck and shoulders light vinaceous drab basally becoming darker near subapical warm buff band and tipped with black; hairs on mid-back and corresponding area on sides dark vinaceous drab basally with subapical

band varying from pale orange yellow to light orange yellow, and with black tips; hairs on rump near dull purplish black except for the rather long grayish white tips; hairs on upper arms and legs to ankles dark at base with subapical band varying from grayish white to buff. Digits on fore and hind feet blackish; remainder of fore and hind feet grizzled above, the hairs dark basally with short subapical grayish white or buffy bands. Hairs of underside from throat to vent light vinaceous drab basally with grayish white tips. Hairs on chin whitish. Ears sparsely covered with short unicolored hairs externally, but on inside the hairs have short buffy subapical bands.

*Pelage*.—Stiff and harsh on back and sides. Hairs on rump long, up to 85 mm. in length; hairs on back and shoulders shorter, about 25–30 mm. in length; hairs on underparts 12–14 mm. in length; hairs on hands and feet short. Tail almost bare. Ears sparsely covered with short hairs internally and externally and about 25 mm. in length from notch (dried).

*Skull*.—Similar to *Dasyprocta punctata dariensis*, but smaller. Bullae somewhat smaller than in *dariensis* and apparently slightly smaller than in *callida*. Nasals variable in width and length, but averaging broader than in *callida*.

*Measurements*.—*Type*: Total length, 500 mm.; tail, 10; hind foot, 102. Four male topotypes, respectively: Total length, 495, 480, 470, and 460; tail, 10, 10, 33 (tail vertebrae), and 10; hind foot, 100, 102, 102, and 105. Four female topotypes, respectively: Total length, 500, 480, 430, and 430; tail, 10, 10, 12, and 8; hind foot, 99, 102, 100, and 98.

*Skull (type)*: Greatest length, 103.6; condylobasal length, 96.9; zygomatic width, 47.1; least interorbital width, 29.3; length of nasals, 41.2; palatilar length, 38.6; length of bulla, 15.3; crown length of upper molar row, 18.1; length of mandible, 59.9. Four male topotypes, respectively: Greatest length, 101.7, 97.1, 98, and 96.2; condylobasal length, 95.9, 89.3, 92.6, and 90.4; zygomatic width, 47, 44.2, 44.8, and —; least interorbital width, 30.3, 27.5, 28, and 28.8; length of nasals, 38.5, 35.5, 34.5, and 35.8; palatilar length, 39.4, 36.8, 36.7, and 37.4; length of bulla, 16.5, 15, 14.3, and 15.1; crown length of upper molar row, 17.7, 16.8, 18.2, and 17.6; length of mandible, 58.3, 55.3, 55.5, and 55.5. Four female topotypes, respectively: Greatest length, 98.7, 100.6, 90.4, and 89.2; condylobasal length, 91.8, 93.9, 81.5, and 82.3; zygomatic width, 46.2, 46.1, 40.5, and 41.8; least interorbital width, 29, 28, 25.6, and 26.7; length of nasals, 35.1, 38.3, 32.6, and 31.7; palatilar length, 36.8, 38.4, 33.6, and 32.8; length of bulla, 13.8, 14.7, 13.7, and 12.8; crown length of upper molar row, 17.3, 18.3, 18, and 17; length of mandible, 56.7, 58.8, 51.2, and 51.

*Remarks*.—This series of skins from San José Island are rather uniform in general coloration and are readily distinguishable from related forms by the different coloring of the upperparts and underparts. They have been compared with one topotype of *callida* from the series described by Bangs as well as with specimens representing the races from the adjacent mainland. Both of the two races of agouti which occur on adjacent islands in the Pearl Island group have somewhat smaller skulls and external dimensions than the mainland race *dariensis*. Like *dariensis*,

however, both have white tipped rump hairs but lack the rich orange buffy coloration of the upperparts.

*Specimens examined.*—Total number, 9 (2, skulls only), from the type locality.

***Proechimys semispinosus ignotus*, subsp. nov.**

*Type locality.*—Isla San José, Archipelago de las Perlas, Golfo de Panama, Panama.

*Type specimen.*—Male adult, skin and skull; No. 277160, U. S. National Museum; collected May 8, 1944, 1945, by J. P. E. Morrison; original number 28.

*Distribution.*—Known only from the type locality.

*General characters.*—Like *Proechimys semispinosus burrus*, *P. s. panamensis*, and *P. s. chiriquinus*, but general coloration darker, less reddish and with more pronounced blackish suffusion in color of upperparts. Hind foot apparently larger than in *burrus*. Skull differing from *panamensis* in wider incisive foramina, narrower third upper cheek tooth, and nasals terminating normally anterior to level of front edge of orbit.

*Color* (terms after Ridgway, Color Standards and Color Nomenclature, 1912).—General color of upperparts much darker than in either *Proechimys semispinosus burrus* or *P. s. panamensis*, and more black lined and less reddish, the black tipped hairs and channeled spines predominating over the cinnamon to tawny subapical bands on the hairs. Hairs on back light drab basally, with subapical cinnamon (rarely tawny) band about 2.5 mm. in width and a black tip. Channeled spines pale ecru drab basally with black tips. Rump coarsely haired, similar in color to rest of back, but with longer black tips on the hairs. Forehead, cheeks and sides of neck as dark as in some specimens of *panamensis*. Outer surfaces of fore and hind limbs similar to sides, but the cinnamon or tawny subapical bands on the hairs are shorter. Upper surface of hands and feet much lighter than upperparts, near cinnamon drab on the darker portions although the hairs have light tips and with whitish hairs projecting from base of the nails. Underparts pure white except for the cinnamon wash on some of the hairs in front of forelimbs. Inner surfaces of fore and hind limbs bare or sparsely covered with white hairs. Tail dark above, lighter below.

*Pelage.*—Stiff and harsh on back, sides less so; rump and outer surface of limbs without spines. Noticeable admixture of flattened channeled spines on back and sides, each about 20–22 mm. in length. Hairs on upperparts up to 20 mm. in length; hairs on underparts rather soft; hairs on hands and feet short, 3–4 mm. in length and cinnamon drab colored with light tips. Tail moderately haired, the majority of the bristle hairs on basal half of tail being as long as the length of 5–6 scales. Tail moderately scaled, 9–10 rows per 10 mm. Ears normal, sparsely covered with short hairs internally and externally, about 20 mm. in length from notch (dried).

*Skull.*—Crown length of molar series as well as skull apparently aver-

aging larger than in *burrus*. Skull large and robust; nasals long, slightly widened near middle, not markedly attenuated posteriorly, and extending to level of front edge of orbit on only one (type) of nine skulls; supraorbital edges broadly ridged, continuous posteriorly with the somewhat narrower ridges that extend obliquely forward from outer edges of interparietal; incisive foramina wider medially than in *panamensis*; hamular processes of pterygoids broad and spatulate; third upper cheek tooth averaging narrower than in *panamensis*; zygomatic arches and bullae similar to *panamensis*.

*Measurements.*—*Type*: Total length, 477 mm.; tail, 182; hind foot, 62. Three male topotypes, respectively: Total length, 463, 444, and 420; tail, 182, 180, and 165; hind foot, 62, 61, and 57. Two female topotypes, respectively: Total length, 437, 432; tail, 172, 170; hind foot, 58, 55.

Skull (type): Greatest length, 67.2; condylobasal length, 59.1; zygomatic width, 31; least interorbital width, 13.9; length of nasals, 26.7; palatilar length, 24.2; anterior palatine foramina, 5.8; length of bulla, 11.4; crown length of molar row, 10.6; length of mandible, 35.2. Three male topotypes, respectively: Greatest length, 63.8, 63.1, and 60.1; condylobasal length, 57.2, 56.9, and 54.1; zygomatic width, 29.8, 30, and 29.8; least interorbital width, 13.7, 13.9, and 14.3; length of nasals, 24.4, 25.4, and 23.1; palatilar length, 23.2, 22.2, and 20.8; anterior palatine foramina, 5.5, 5.7, and 5.4; length of bulla, 10.6, 10.1, and 10.2; crown length of upper molar row, 10.2, 10.1, and 9.8; length of mandible, 34.3, 33.9, and 32.3. Two female topotypes, respectively: Greatest length, 61.4, 64.2; condylobasal length, 55.5, 56.8; zygomatic width, 30.1, 30.6; least interorbital width, 14.3, 14.7; length of nasals, 23.7, 24.7; palatilar length, 22.2, 23.2; anterior palatine foramina, 5.3, 5.8; length of bulla, 10.3, 10.7; crown length of upper molar row, 10, 10.1; length of mandible, 33.8, 35.5.

*Remarks.*—This spiny rat is closely allied to *Proechimys semispinosus burrus*, *P. s. panamensis*, and *P. s. chiriquinus*, but is distinguished by its darker coloration. In color at least, the San José island spiny rat is more noticeably differentiated from the mainland forms than *burrus* on the adjacent Isla del Rey [San Miguel]. Only one of the specimens (No. 271455) taken on San José Island exhibited an approach to the reddish coloration of the above mentioned races. Bangs in describing *burrus* published the measurements of 10 of the 51 specimens captured on Isla del Rey. These 10 selected specimens have an average head and body length of 279.3 mm. (260–305). Since the series from San José Island have a head and body length ranging from 240 to 295, it is quite likely that an equivalent series from this island would closely approximate the average head and body length of *burrus*.

*Specimens examined.*—Total number, 10 (2, skulls only), from the type locality.



Kellogg, Remington. 1946. "Three new mammals from the Pearl Islands, Panama." *Proceedings of the Biological Society of Washington* 59, 57–62.

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