

R1: ITTY BITTY COME BACK CITY



Goldstein Lab Tardigrades / Wikimedia Commons / CC-BY-SA 2.0

Bringing back some beloved littles that were 14, 15, & 16 seeds early departed from tournament contention. These mini mammals are back for another chance at March Mammal Madness glory.

Sea Otter (1) v. Bumblebee Bat (16) – Sea Otter (*Enhydra lutra*) was a 16th seed in 2014's Marine Mammal Division, losing in the first round, as Sea Otter is the 2nd smallest marine mammal living in the world today. Found along the Pacific coast of North America to Russia, they're capable of living exclusively at sea with their dense coat and ability to float. The Sea Otter uses its cohesive black paw pads to keep slippery prey, like octopi, squid, and fish, from getting away. They use loose folds of skin as pockets to store their favorite mussel-smashing rock.



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The Bumblebee Bat (*Craseonycteris thonglongyai*) won a berth to this Division in 2023 making it a 2-time WILD CARD Winner! Bumblebee Bat also defeated Pygmy Jerboa in the wild card in 2015. Although the Bumblebee Bat is about 1/20,000th of the Sea Otter weight (2g), the sagittal crest on the skull indicates they pack a big

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bite. Nigerian scientists at Ibrahim Badamasi Babangida University found that Bumblebee Bat guano improves the nutritional quality of red amaranth and antioxidant concentration in false sesame.



Puechmaille et al. 2009 / Wikimedia Commons / <https://www.int-res.com/articles/esr2009/8/n008p015.pdf>

Bumblebee Bat is heading back to its limestone cave in Thailand after a night of hunting. When Bumblebee Bat enters the cave, the temperature drops about 20°F and the sound of crickets is replaced by slapping waves. MMMagic has transported Bumblebee Bat off the shore of one of the Aleutian Islands near Alaska. Unfortunately, the middle of the sea isn't a great place for a bat to sleep. Sea Otter, meanwhile, yawns below

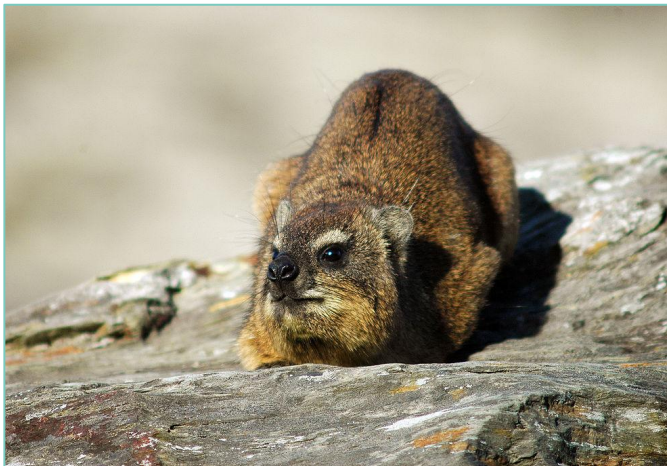
Bumblebee Bat. Sea Otters are diurnal (active during the day), so when the bat is just getting ready to bed, Sea Otter is waking up. Bumblebee Bat uses their echolocation to scan its surroundings, fluttering about making its "characteristic tweets" (Hill & Smith 1981). No cave to be found, Bumblebee Bat flutters away intent to find land while Sea Otter begins to groom himself. SEA OTTER OUTLASTS BUMBLEBEE BAT! Narrated by Dr. Asia Murphy.

Rock Hyrax (2) v. seed Pygmy Jerboa (15) – Hopping into the ring at a whopping 3.5 g is the Pygmy Jerboa (*Salpingotulus michaelis*) who LOST its 2015 wild card battle as Bumblebee Bat chased it from contention. These tiny rodents have elongated hind limbs like a mini kangaroo and a long tail that provides balance as they zig-zag run through sand. Known only from desert regions of southwest Pakistan, Pygmy Jerboas do not need to drink water because they get their daily water from eating seeds and leaves. Rock Hyrax (*Procapra capensis*), weighing about 10lbs, was a #16-seed back in 2014. But even getting to compete as a social group in the Social Mammal Division, Rock Hyrax was no match for the stomping power of a fully armed and operational Musk Oxen herd. Unlike Pygmy Jerboa, the Rock Hyrax has a



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broad geographic range, occurring through most of Africa and parts of the Arabian Peninsula. They can easily scamper in and among their rocky dwellings thanks to their large, soft footpads. Although they look like large rodents and are sometimes referred to as 'rock rabbits', Rock Hyraxes are neither. Rock hyraxes are most closely related to elephants and in their own Order: Hyracoidea.



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Stocky formations of the Hoggar mountains pierce the skyline in Ahaggar National Park in southeast Algeria. This otherworldly landscape is most notably home to the critically endangered Saharan Cheetah. Our male Hyrax is sprawled out on the edge of a large rock, basking in the Algerian sun. Rock Hyraxes are notoriously lazy, spending 95% of their day just lounging. Other hyraxes are scattered nearby, with a handful piled all on top of each other in a heap. Having been snoozing away in a cozy burrow moments ago, our nocturnal Jerboa blinks against the setting sun. Jerboa takes a cautious hop on the

rocky surface where our Hyrax is sprawled. TRIIIIIIIIIIIIIIIIIIIII. Our Hyrax jerks his head up as the high-pitched alarm of another, nearby hyrax echoes across the rocks. With a grunt, the Hyrax bounds into its nearby crevice just as the elegant haunches and graceful tail of a Saharan Cheetah saunter into view. The Jerboa goes to bound into the rock refuge too... SMACK! The Cheetah whacks at the first sign of movement with a long, curious paw and sniffs at the unfamiliar rodent before consuming the tiny, stunned Jerboa in one swallow. Content with its snack, Cheetah continues on its way, while the Hyrax emerges from the rock crevice to resume foraging. ROCK HYRAX OUTLIVES THE PYGMY JERBOA!! Narrated by Dr. Alyson Brokaw.

Mara (4) v. Siberian Chipmunk (13) – In 2014, the Mara (*Dolichotis patagonum*), weighing 8.12kg, was the #15-seed rabbit-looking capybara relative that acts and moves like an ungulate in The Who in the What Now Division. With tiny, hoof-like feet, Mara spends the day walking through open environments, nibbling on just the very tops of uncommon grass, cacti, and fruits in the shrub and grasslands of Argentina. The Mara is always carefully watching for South American gray foxes and hawks. Like rabbits, Mara are hindgut-fermenters, with food mostly being digested in the cecum and large intestine. Things don't break down all that well, so Maras believe in enjoying a meal twice, practicing coprophagy (i.e., poop-eating), even eating poop that's not

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their own! Siberian Chipmunk (*Eutamias sibiricus*) is back after being a #15-seed first-round snack attack in 2016 for #2-seed Snow Leopard in the Cold-Adapted Division. At 150g, the Siberian Chipmunk is found in Russia and surrounding, northern countries, where it eats a variety of food, including birds, reptiles, fungi, and seeds. Siberian Chipmunks spend their days in the forest, stealing from the food caches of other chipmunks while carefully avoiding their own until there are no witnesses, ever-preparing for the coming winter.

MMMagic transports our Siberian Chipmunk to the warmth of a southern hemisphere late summer day and goes motionless where he stands to assess the yellow, nearly transparent grass. Nearby, the Mara male is carefully rubbing his butt against the ground marking his small, drifting territory that

centers around his female mate. The female does not pay attention; she's busy eating. The Siberian Chipmunk is determined to find the nearest hideyhole and the Mara male is marking his territory, so both are too preoccupied to notice the slinking predator... then Siberian Chipmunk alarms a shrill cry as a lesser grison slinks into the scene! The Siberian Chipmunk's shrill cry reveals its position and is abruptly cut off by the jaws of the lesser grison. MARA OUTLIVES SIBERIAN CHIPMUNK! Narrated by Dr. Asia Murphy.



Alpsdake / Wikimedia Commons / CC-BY-SA-NC 4.0



Dik-Dik (3) versus Colo Colo Opossum (14) -

The Dik-Dik (*Modacta guentheri*) is one of the most diminutive ungulates, but a heavyweight in this bracket, weighing in at 3–5 kg (6.6–11.0 lb) or 12-23 stoats. Dik-Diks live in male-female pairs with dependent offspring in scrubby or woodland areas with some cover. Being a bite-sized snack to a multitude of predators means Dik Dik spend a lot of time being alert, always ready to dash for safety into the nearby bush. Females and males look very similar from a distance, though females are slightly larger and males have a modest pair of horns that are used to fight other males, not so much defending himself or family against predators.



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The Colo Colo Opossum (aka *Dromiciops gliroides*, monito del monte & chumaihuén in Mapudungun, the language of the Mapuche in south-central Chile & west-central Argentina) lives in cool humid high-altitude forests and builds round nests where they cram together to retain heat during hibernation. This miniscule marsupial scarfs insects to store fat for hibernation in her tail, and by the end of the (southern) summer Colo Colo may get her energy reserves up enough to weigh an impressive 1/5th of a stoat (~42g). As a marsupial, the Colo Colo has a delightfully complex reproductive situation, consisting of two uteruses, two vagina, & a four-nippled pouch in which her minuscule offspring finish developing.

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Our scene opens in Meru National park in central Kenya. The park covers 870km² and "habitats that range from lush green vegetation on rich volcanic soils to semi-arid scrublands and open plains" (Africa Geographic). The nocturnal Colo Colo is rudely awakened by sunlight pouring onto the acacia tree she's in. She wraps her engorged but still grasping (prehensile) tail around a branch & wonders if her soon-to-be-weaned offspring are keeping warm back in their nest. Down below, the female Dik-Dik is resting with her family under the tree the Colo Colo is wedged in. Above all of their heads, a Central African Rock Python glides down a branch, flickering tongue sensing several potential mammalian targets. The python pauses and lifts her head to evaluate the distant but familiar scent of the Dik-Dik versus a closer but unfamiliar smell. Deciding not to try anything new, the python slithers down the trunk of the tree, heading towards the baby Dik-Dik. Though small, this delectable morsel would keep her satiated for quite a while. The snake's movement catches the eye of a White-bellied Go Away Bird perched in the top of a nearby tree. The bird's alarm calls are meant to warn members of her species, but Dik-Dik eavesdrops and takes heed, looking around for a predator. The Colo Colo on the other hand is far from home & the alarm call is not familiar. Colo Colo gets ready to move away from the Go Away Bird, but the python senses the

nearby movement and strikes. Wrapping a coil around the small Colo Colo, the python squeezes & waits for the Colo Colo to die of cardiac arrest. DIK-DIK OUTLASTS COLO COLO OPOSSUM!! Narration by Dr. Anne Hilborn.

Sibree Dwarf Lemur (5) vs. Silver Pika (12) – The Sibree Dwarf Lemur (*Cheirogaleus sibreei*) is one of ~25 species of dwarf/mouse lemurs, which are tiny primates found only in the rainforests of Madagascar. The Sibree Dwarf Lemur weighs in at ~270g and is back after a 2015 1st-round "RUN AWAY!" from Tamaraw in the Critically Endangered Division. Long thought extinct, Sibree Dwarf Lemurs were rediscovered in 2008 in central Madagascar.



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People's Daily, China / Twitter

The Sibre Dwarf Lemur are omnivores, consuming invertebrates, flowers, leaves, and figs and they have strong hind legs and a long tail used for balance. This small, elusive, nocturnal species but they seem to be alpine specialists, with only 3 known populations isolated on a few mountaintops. Pikas (*Ochotona argentata*), on the other hand, are round, FLOOFy, rabbit relatives with no tails, typically found in alpine habitats. The Silver Pika weighs about 240g. That's double its American cousin *O. princeps*, but smaller than its opponent. As a #16-seed in the Critically Endangered Division in 2015, Round 1 saw Silver Pika SQUISHED by #1-seed Sumatran Rhinoceros. Silver pikas are actually among the least-studied of the pikas and have the tiniest range of any pika in China: they are only found in a few small areas of rocky habitat totaling ~50 square kilometers on Helan Mountain. In spite of its name, the Silver Pika is only silver in the winter: its fur is actually bright red in summer! Perhaps it is also named for the fact that most of its occurrences are in the entrances of disused mine shafts.

Sidebar: Did you know that there is a WHOLE SOCIETY devoted to FLOOFY pikas? The North American Pika Consortium even has ENTIRE CONFERENCES devoted to pikas every few years!

Our battle happens in the rainforest of Tsinjoarivo, Madagascar, the only home habitat for the Sibre Dwarf Lemur. It's dusk and there is a light rain. Due to a bit of MMMagic, the Silver Pika finds itself in a most unusual place: scurrying along a warm forest floor. Suddenly leaves rustle overhead. It's the lemur rousing from daytime slumber and beginning to hunt for an insect breakfast. Its large forward-facing eyes give it excellent depth perception and night vision, so it easily spots the floofy pika. It LEAPS from a branch... And lands SQUARELY ON THE PIKA! The lemur desperately clutches the pika's thick fur, trying to get a good grip. The pika, meanwhile, darts among branches in the forest floor, lighting fast, trying to shake the lemur from its back. CLONK! Sibre's Dwarf Lemur gets clocked by a low branch in the understory as Silver Pika runs away unharmed. But the heat of the Malagasy rainforest has taken its toll. As an alpine specialist, the Silver Pika can't handle the tropical heat, over 75F, even after dark. As the lemur shakes head, the pika turns tail (so to speak, since it has no external tail) and dives into an abandoned gold mine shaft in the forest to cool off, departing the field of the battle. SIBREE DWARF LEMUR "SEES STARS" BUT OUTLASTS SILVER PIKA! Narration by Prof. Jo Varner.

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marsupial mole / Encyclopædia Britannica / CC-BY-SA 3.0

Itjaritjari (6) vs. Silky Anteater (11) - The Itjaritjari (*Notoryctes typhlops*), also called the marsupial mole, is very small (head & body length 121–159 mm, weight 40–70 g), has big digging claws on its front feet, and a thickened "rostral horny shield" to protect its nose and front of its face (Bennison et al. 2014). Itjaritjari is a marsupial whose babies spend time in a pouch after birth. Living underground, the Itjaritjari's pouch opens backwards so it doesn't fill up with sand and soil from mom's tunneling movements. The Silky Anteater (*Cyclopes didactylus*) is a teensy tree-living, ant specialist that consumes 700-5000 ants per day year-round. The 225-gram Silky Anteater has combination coloring of grey, brown, tan, and yellow hairs that are long and dense with a silver gloss. When threatened in the tree-tops, Silky Anteater takes a defensive stance, clinging to the branch with back feet and grasping tail and holding its front feet to protect its face, a

tactic, incidentally, that was not effective in 2017 March Mammal Madness when Silky Anteater was a #15-seed against the #2-seed Clouded Leopard.



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MMagic transports Silky Anteater from its nocturnal ant foraging in the green, lush South American forest along river corridors... to daytime in the red sands of Uluru-Kata Tjuta National Park in central Australia. In 1985, Kata-Tjuta National Park was returned to the Yankunytjatjara & Pitjantjatjara people, the traditional stewards/owners of the land (cough, contingent on an immediate 100-year lease to the Australian govt). Today in the joint-managed Uluru-Kata Tjuta National Park, "Tjukurpa – Anangu traditional law, knowledge & religious philosophy – guides everything that happens in the park, just as it has for tens of thousands of years", and Tjukurpa guidance includes "using



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traditional methods to conserve the park's plants, animals, culture & landscapes" (Parks Australia). Terrified to find itself terrestrial in a sandy desert, Silky Anteater begins moving toward a massive rock in the distance. Seasonal rains pour and pool in the massive rock habitat, watering groves of Bloodwood trees at Uluru's base, an arboreal oasis for Silky Anteater. FWWWW! Itjaritjari emerges from the sand after a lizard. CLONK! The lizard collides face-first with Silky Anteater. BOING! Lizard bounces backwards into Itjaritjari's grasp to be RRRRRRFT ripped open! SLOSH! Itjaritjari noisily eats lizard's insides... POOF! Silky Anteater leaves behind only a puff of sand dust as he races toward the only tree in sight, leaving this nightmare scene of battle. ITJARITJARI SCARES SILKY ANTEATER!!!
Narration by Prof. Katie Hinde.



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Bulldog Bat (7) vs. Thor's Hero Shrew (10) – Greater Bulldog Bat (*Noctilio leporinus*) was first seen on the MMM scene in 2019, as a #16-seed against Moose in the Waterfalls Division and was sadly exited from the tournament by hypothermia in a Bomb Cyclone that ripped through Rocky Mountain National Park. Strikingly orange with short, velvety fur, the Bulldog Bat is nicknamed for its square head and droopy, bulldog-like lips. While it may be itty-bitty to some, this Bat's 70 cm wingspan is nothing to scoff at. Most distinctive are the Bat's long feet and curved nails, which it uses to catch fish in freshwater streams and rivers in Neotropical forests. In addition to fish, Bulldog Bats regularly feed on aerial insects like beetles and moths, though in Puerto Rico, Bulldog Bats are even reported to hunt other smaller bats. First described by science in 2013, Thor's Hero Shrew (*Scutisorex thori*) has a backbone as impressive as any superhero and emerged from the 2016 wildcard against King Midas Bat, to be sadly defeated by #1-seed Panda's powerful Sits-and-Persists strategy. Thor's Hero shrew has relatively massive backbones (vertebrae) complete with interlocking bony tubercles, making it ~4x stronger than that of a human (adjusted for size). Known only from the village of Baleko in the Democratic Republic of Congo, Thor's Hero Shrew has grizzled brown and grey fur, a long bicolored tail, and weighs about 47g. Exactly why their spine is so strong remains to be seen, but it's thought to be related to their

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foraging habits, based on observations from local residents who commonly see these shrews when collecting beetle larvae.



Dr. William T. Stanley (c) Field Museum of Natural History

The silvery thread of moonlight just brushes the tops of the ancient stones of High Temple, the tallest of the ancient Mayan ruins part of the Lamanai Archeological Site in northern Belize. Nearby, the waters of the New River lap softly against the bank. A shadow glides about a foot above the waves. It's our Bulldog bat, out for a night of fishing in its home habitat. Transported by MMMagic from its central African home, our shrew finds itself on the banks of the river. SNIFF. SNIFF. The air smells different, but is warm and humid like what the shrew is used to. Hungry, the shrew scuffles along the edge of the water looking

for a snack. The bat swoops by, opens its mouth wide and emits a loud SCREEEE (140 dB SPL to be exact, like standing next to a jackhammer)! A soft splash echoes against the night sky. With the bat's calls outside of the shrew's hearing range, the shrew does not notice. Shrew is busy trying to wedge its body against a hefty tree branch to look for grubs, using its strong back as leverage. Despite the shrew's best effort, the tree branch will not budge. The shrew withdraws its body from the branch scuttling away from the river's edge in search of easier hunting. A second splash follows as the bat's slippery fish prey slips through its claws. Bat circles back, ready to try again. BULLDOG BAT OUTLASTS THOR'S HERO SHREW! Narration by Dr. Alyson Brokaw.

Southern Ningai (8) vs Grasshopper Mouse (9) - This is a battle of teeny terrors! Welcome to the arena the Southern Ningai, 12g of complete fury from Southern Australia. "While Southern Ningai only get up to 5.7 cm long, they are known for going after prey that is double their size, attacking in a "lunge-bite-retreat" style." (Bos 2001). Like many other marsupials, female Southern Ningai have a pouch in which to carry their babies, which are born in November and December. Ningai was a #16-seed that ran away from #1-seed Pygmy Hog in the first round of Tiny Terrors in 2020. On the other side of the





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arena is the whopping 40g Grasshopper Mouse, found in the western parts of North America, from Canada to Mexico. With small, pointed teeth, much like the Southern Ningai, the Grasshopper Mouse is a carnivorous beast, eating invertebrates and other mice, including members of their own species. In 2017, in the Two Animals One Mammal Division, #15-seed Grasshopper Mouse became dearly departed after a lethal bite from #2-seed Leopard Cat.

It is just after sunset in the mallee habitat in Mungo NP, southern Australia. Mungo NP is a World Heritage site, home to some of the oldest ritual human burial sites, and co-managed by indigenous Aboriginal Australians. Our Southern Ningai leaps from the top of a stalk into a clump of vegetation, snagging a tasty moth! Still crunching on their prize, the Ningai continues its foraging walk, sniffing for more food as it weaves in & out of clumps of vegetation, unaware that something is stalking Ningai from the shadows.



Erika Jasmin Cruz-Bazan / iNaturalist / CC BY-NC 4.0

Only the shrill, bloodthirsty cry alerts the Ningai as the Grasshopper Mouse pounces! Grasshopper Mouse prefers insects when they are available, but with it March in the US, there are few bugs around. So now Grasshopper Mouse craves meat. "Ningai could outrun Grasshopper Mouse in the open," (Bailey & Sperry 1929), but Ningai prefer habitats that haven't burned recently with plenty of "narrow place(s) [where] they [can] catch & kill." (Kelly et al 2011). As the Grasshopper Mouse grasps the Ningai with strong paws, Ningai turns sharp teeth on Grasshopper Mouse! Grasshopper Mouse, used to tangling with lightning quick scorpions, dodges the bite. And lands a bite of its own... Right through the Ningai's skull! The Ningai's body twitches as the Grasshopper Mouse begins a long-awaited feast. **GRASSHOPPER MOUSE DEVOURS SOUTHERN NINGAI!** Narrated by Dr. Asia Murphy.

Itty Bitty Come Back City Citations



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Rock Hyrax vs. Pygmy Jerboa

Ghalib, S.A., Jabbar, A., Khan, A.R., Zehra, A. (2007). Current status of the mammals of Balochistan. *Pakistan Journal of Zoology*, 39(2), 117-122.

Olds, N., Shoshani, J. (1982). *Procavia capensis*. *Mammalian Species*, 171, 1-7.

Sale, J.B., (1970). The Behaviour of the Resting Rock Hyrax in Relation to its Environment. *Zoologica Africana*, 5(1), 87-99.

Silver Pika vs. Dwarf Lemur

Blanco, M. B., Godfrey, L. R., Rakotondratsima, M., Rahalinarivo, V., Samonds, K. E., Raharison, J. L., & Irwin, M. T. (2008). Discovery of sympatric dwarf lemur species in the high-altitude rain forest of Tsinjoarivo, Eastern Madagascar: implications for biogeography and conservation. *Folia Primatologica*, 80(1), 1-17.

Shanahan, M., So, S., Compton, S. G., & Corlett, R. (2001). Fig-eating by vertebrate frugivores: a global review. *Biological reviews*, 76(4), 529-572.

Lambert, J. P., Zhang, X., Shi, K., & Riordan, P. (2023). The pikas of China: a review of current research priorities and challenges for conservation. *Integrative Zoology*, 18(1), 110-128.

Southern Ningai vs. Grasshopper Mouse

Bos, D.G. (2001). Some Observations On Foraging Behaviour In The Southern Ningai, Ningai Yvonneae. *Australian Mammalogy*, 23: 59-61.

[National Indigenous Australian Agency](#). (n.d.) Willandra Lakes World Heritage Area Rangers.

Bailey, V., & Sperry, C. (1929). Life history and habits of grasshopper mice, genus *Onychomys* (Technical Bulletin No. 145). United States Department of Agriculture.

Kelly, L.T., Nimmo, D.G., Spence-Bailey, L.M., Haslem, A., Watson, S.J., Clarke, M.F. and Bennett, A.F. (2011), Influence of fire history on small mammal distributions: insights from a 100-year post-fire chronosequence. *Diversity and Distributions*, 17: 462-473.

Itjaritari vs. Silky Anteater

Bennison, K., Clayton, J., Godfree, R., Pavey, C., & Wilson, M. (2014). Surfacing behaviour and ecology of the marsupial mole (*Notoryctes typhlops*) at Uluru-Kata Tjuta National Park. *Australian Mammalogy*, 36(2), 184-188.

Hayssen, V., Miranda, F., & Pasch, B. (2012). *Cyclopes didactylus* (*Pilosa: Cyclopedidae*). *Mammalian Species*, 44(895), 51-58.

Parks Australia. (n.d.) Uluru-Kata Tjuta National Park Joint Management. <https://parksaustralia.gov.au/uluru/about/joint-management/>

Pavey, C. R., Burwell, C. J., & Benshemesh, J. (2012). Diet and prey selection of the southern marsupial mole: an enigma from Australia's sand deserts. *Journal of Zoology*, 287(2), 115-123.

Sea Otter vs. Bumblebee Bat

Hill, J. E., & Smith, S. E. (1981). *Craseonycteris thonglongyai*. *Mammalian species*, (160), 1-4.

Musa, A., Agaie, H.A., Kumar, N., Ogbiko, C. (2017). Comparison of the effects of *Craseonycteris thonglongyai* (bumblebee bat) droppings and synthetic fertilizer on some phytotoxins in the leaf of *Amaranthus cruentus*. *Journal of Scientific Agriculture*, 1, 182-187.

Musa, A., Elele, U.U., Olatunji, N.M., Abu, M.L., Enemali, M.O., (2020). Comparative study of the effects of *Craseonycteris thonglongyai* compost and chemical fertilizer on some antioxidant constituents in the leaf of *Ceratothera sesamoides* (False Sesame). *The Bioscientist*, 7(1), 40-50.



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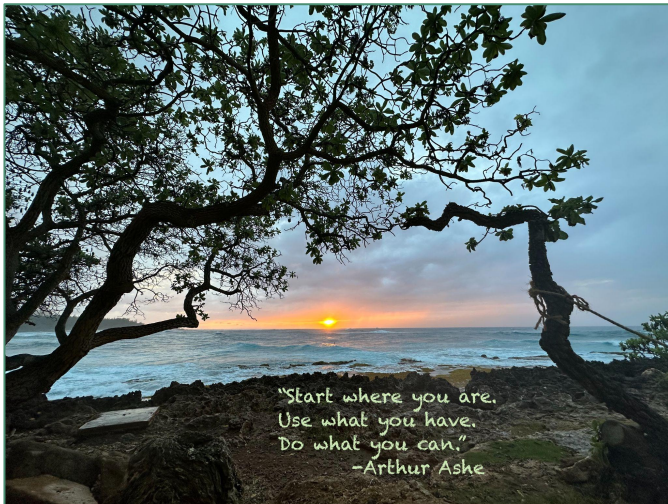
Bulldog Bat vs. Thor's Hero Shrew

Hood, C. S., & Jones, J. K. (1984). *Noctilio leporinus*. *Mammalian species*, (216), 1-7.

Rodríguez-Durán, A., & Rosa, J. (2020). Remarkable variation in the diet of *Noctilio leporinus* in Puerto Rico: the fishing bat turns carnivorous. *Acta Chiropterologica*, 22(1), 175-178.

Stanley, W. T., Robbins, L. W., Malekani, J. M., Mbalitini, S. G., Migurimu, D. A., Mukinzi, J. C., ... & Esselstyn, J. A. (2013). A new hero emerges: another exceptional mammalian spine and its potential adaptive significance. *Biology Letters*, 9(5), 20130486.

Surlykke, A., & Kalko, E. K. (2008). Echolocating bats cry out loud to detect their prey. *PLoS one*, 3(4), e2036.



Mara vs. Siberian Chipmunk

Taber, A. (1987). The behavioural ecology of the Mara, *Dolichotis patagonus* [PhD thesis]. University of Oxford.

Yi, X., Steele, M.A., Stratford, J.A. et al. (2016). The use of spatial memory for cache management by a scatter-hoarding rodent. *Behav Ecol Sociobiol* 70, 1527–1534.

Dik-Dik vs. Colo Colo Possum

Africa Geographic (n.d.) Meru National Park.
<https://africageographic.com/stories/meru-national-park/>

Lea, A. J., Barrera, J. P., Tom, L. M., & Blumstein, D. T. (2008). Heterospecific eavesdropping in a nonsocial species. *Behavioral Ecology*, 19(5), 1041-1046.

Muñoz-Pedrerros, A., Lang, B. K., Bretos, M., & Meserve, P. L. (2005). Reproduction and development of *Dromiciops gliroides* (Marsupialia: Microbiotheriidae) in temperate rainforests of southern Chile. *Gayana*, 69(2), 225-233.



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