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# **Penguins vs. Lemurs**

**Research question: Who would win in a fight between a penguin and a lemur?**

Many researchers in the past have endeavored to observe and analyze the behavior and characteristics of almost all species in nature. However, it is not clear if researchers have ever attempted to put their encyclopedic knowledge of the inner and outer workings of these creatures to the test. Therefore, hoping to push existing boundaries, this paper will put the accumulated knowledge of two animals to the ultimate test, in an attempt to answer the age-old question of who would win in a fight between a penguin and a lemur.

Despite the apparent simplicity of this question, there is actually a considerable amount of information to synthesize before coming to an intelligent conclusion. Since we cannot physically let these animals fight without the animal rights activists getting on our case, we must stage this fight on paper. The first thing we must do is choose the location of the fight; one equally advantageous for both parties. Thirdly, we must choose which species and sex of penguin and lemur will represent its class. Fourthly, we must discuss each creature's physical composition, weaponry and fighting style, and how the opponent might defend itself against the attacker. Finally, we need to account for any other factors that might influence the outcome, such as group support.

The first item to discuss is the location of this battle. As with many things in life, the outcome depends on the context. As stated in Huntingford and Turner's book *Animal Conflict*, "animals often adapt the form and intensity of their agonistic responses to the context in which an encounter occurs".<sup>1</sup> In a fight to the death between two entirely different classes of animals, it is important that the location for the fight to be equally advantageous for both parties involved. For instance, while the penguin is most

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<sup>1</sup> Huntingford, Felicity A. and Turner, Angela K., *Animal Conflict*, New York: Chapman and Hall, 1987, p. 46.

comfortable in cold environments, the lemur has an extremely uneven body temperature, greatly affected by its environment. For the lemur, “when the environmental temperature is low, so is the body temperature, indicating decreased metabolic activity.”<sup>2</sup> Were this fight to take place in the penguin’s home territory, the lemur’s ability to perform at his best would be affected by the cold climate. Contrarily, penguins are “highly specialized for marine existence”, and, on land, are “handicapped by the position of their short legs, set far back on their bodies.”<sup>3</sup> It was thus be unfair for the fight to take place entirely on land, as the penguin would be at too much of a disadvantage.

After a little investigation, it becomes clear that there is no geographic location in which lemurs and penguins coexist in nature anyway. All lemurs occur on the African island of Madagascar<sup>4</sup> – however, the closest that penguins get to that particular location is the coast of south Africa, a distance of just over of 1000 miles.<sup>5</sup> This means that the fight will have to take place in an environment orchestrated by man; we will have to create the scenario ourselves.

For our purposes, we will stage the fight in a zoo, one in which the cages have been broken and the animals are loose. This way, there will be both trees *and* ice, water and dry land – this way, both creatures can hold the advantage at some point. However, despite now being in the same physical area, the penguin and the lemur still have no real reason to fight. As stated in *Animal Conflict*, “fierce, damaging fights are most likely to occur when the resource in question is very important for the fitness of the animals

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<sup>2</sup> Eimerl, Sarel and DeVore, Irvn, *The Primates*, New York: Time-Life Books, 1965, p. 12.

<sup>3</sup> Austin Jr., Oliver L., *Birds of the World*, London: Golden Press Inc., 1961, p. 27.

<sup>4</sup> Eimerl, op. cit., p. 24.

<sup>5</sup> Austin Jr., op. cit., p.27.

concerned”.<sup>6</sup> As lemurs are primarily vegetarian<sup>7</sup>, while penguins feed on a diet of mainly krill<sup>8</sup>, the two creatures would never be in direct competition for any food-related resource. However, two interesting personality quirks in each creature would provide reasonable grounds for a violent exchange. Penguins tend to be quite territorial, getting rather upset when intruders visit their nesting grounds, or when their young are threatened by any sort of potential predator.<sup>9</sup> Lemurs, incidentally, are rather “skittish and short-tempered.”<sup>10</sup> Female lemurs, in particular, will get into “instantaneous squabbles over a specific action or object, such as a right of way”<sup>11</sup>

Let’s imagine that after our fictional zoo’s fictional “zoo break”, the penguins were all too comfortable to bother leaving their display. The lemurs, however, have run amok, delighting in the opportunity to jump freely through the branches of the trees dotting the entire zoo. Seven lemurs in particular have migrated to the other side of the zoo, to a tree right above the outdoor penguin display. This wouldn’t be unlikely, as lemurs almost always use the same means of locomotion – that is, they “jump from the extremity of one branch to another,”<sup>12</sup> and also tend to travel in groups of 5-25<sup>13</sup>. Using its highly developed sense of smell<sup>14</sup>, one of the lemurs notices an apple core that has fallen onto one of the “ice floes” in the penguin display, and hops down to investigate.

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<sup>6</sup> Huntingford, op. cit., p. 43.

<sup>7</sup> The Wild Ones (2000). *Lemurs*. Retrieved March 28, 2004 from <http://www.thewildones.org/Animals/lemur.html>.

<sup>8</sup> Allen, Thomas B., *The Marvels of Animal Behaviour*, New York: National Geographic Society, 1972, p. 343.

<sup>9</sup> Austin Jr., op. cit., p. 26.

<sup>10</sup> Richard, Alison F., *Primates in Nature*, New York: W.H. Freeman and Company, 1985, p. 296.

<sup>11</sup> *Ibid.*, p. 297.

<sup>12</sup> Devore, Irven, *Primate Behavior*, New York: Holt, Rinehart and Winston, 1965, p. 297.

<sup>13</sup> Wilson, Don E. and Burnie, David, *Animal: The Definitive Visual Guide to the World's Wildlife*, New York: DK Publishing, 2001, p. 118

<sup>14</sup> Rolling Hills Refuge (2001). *Rolling Hills Refuge – Wildlife Conservation Center – Ring-Tailed Lemur*. Retrieved March 28, 2004 from <http://www.rhrwildlife.com/theanimals/1/lemurringtailed/index.html>.

The other lemurs remain in the tree. However, in order to get to the apple core, the lemur must first walk through a colony of nesting penguins...

Before we go any further, let's discuss the particular species of lemur and penguin we're dealing with. In the lemur's corner, it seems likely to choose the ring-tailed lemur as our contestant. The ring-tailed lemur, scientifically known as *Lemur catta*, is the "classic" lemur most people think of when they consider lemurs. It is cat-like in both body proportions and graceful movements, has a white face with dark nose and eye patches, and a distinctive black and white ringed tail, from which it gets its name.<sup>15</sup> The ring-tailed lemur is one of the only diurnal lemurs,<sup>16</sup> allowing him to interact with the similarly day-active penguins. Although more than capable in tree-top locomotion, the ring-tailed lemur prefers ground movement, which would lead to a more likely encounter with the penguin.<sup>17</sup> The ring-tailed lemur reaches a height of 18 inches, and weight of 7.5 pounds.

In choosing a penguin combatant, it is a natural impulse to select the Emperor penguin, due to its size – they can reach 3 and a half feet in height, and 82 pounds in weight.<sup>18</sup> However, despite being the biggest of all penguins, the Emperor penguin "is probably the only bird on earth that almost never sets foot on bare land."<sup>19</sup> An Antarctic enthusiast has described Emperor penguins as "the most placid animals ever"<sup>20</sup>, suggesting there wouldn't be much excitement were this creature to actually become involved in a spat. Rather than the Emperor penguin, then, it would seem to be a wiser

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<sup>15</sup> Wilson, op. cit., p. 118

<sup>16</sup> Singapore Zoological Gardens Docents (2000). *Lemurs in General (Lemuridae)*. Retrieved March 28, 2004 from <http://www.szgdocent.org/pp/p-lngen.htm>.

<sup>17</sup> Wilson, op. cit., p. 118

<sup>18</sup> Ibid., p. 443

<sup>19</sup> Austin Jr., op. cit., p. 28.

<sup>20</sup> Dargaud, Guillaume (1994-2000). *Antarctic Penguins*. Retrieved March 28, 2004 from <http://www.gdargaud.net/Antarctica/Penguins.html#Emperor>.

choice to select the Adelie penguin. The Adelie penguin is also the “classic” of its kind, sporting the ‘gentleman-in-a-tuxedo’ image so common to our perceptions. It’s the most common of all penguins in Antarctica, and also the most aggressive.<sup>21</sup> Being the most common, the Adelie’s fighting tactics are best documented and most observable, thus most easily applied to the lemur attack. Adelie penguins can reach 61 centimetres in height (24 inches), but can weigh only 12 pounds at most.<sup>22</sup> While not exactly a heavyweight compared to the Emperor, the Adelie still outweighs the ring-tailed lemur by 5 pounds.

One more thing about the penguin: they can toboggan on their stomachs. They “propel themselves over the smooth ice in snow-toboggan fashion, using their flippers as paddles, helped along by the piston-like thrusts of their feet.”<sup>23</sup>

Let’s also assume it is mating season for both penguin and lemur. Due to the displacement of both creatures from their natural habitats, this overlap may be possible, since neither creature would be sticking to their traditional ‘schedule’. The lemur’s natural mating season is from August through to September<sup>24</sup>, while penguins breed between October and March<sup>25</sup>. However, penguins and lemurs raised in captivity would have adapted to the North American climate, and likely synchronized their mating seasons. This is pivotal because aggression is heightened in both species during mating season. For lemurs, “at [mating time], social order collapses in an uproar of howling,

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<sup>21</sup> Ibid., Penguins.html

<sup>22</sup> Wilson, op. cit., p. 444

<sup>23</sup> Austin Jr., op. cit., p. 28.

<sup>24</sup> Busch Entertainment Corporation (2002). *Animal Bytes: Ring-tailed lemurs*. Retrieved March 28, 2004 from <http://www.seaworld.org/AnimalBytes/ring-tailed-lemur.htm>.

<sup>25</sup> Australian Antarctic Division (2003). *Adelie Penguin Biology and Breeding Cycle*. Retrieved March 28, 2004 from <http://www.antdiv.gov.au/default.asp?casid=2943>.

chasing, and mating”<sup>26</sup>. For penguins, breeding time in a crowded rookery can lead to “serious fights” among individuals.<sup>27</sup>

Back to our ring-tailed lemur trying to get to her apple core. He pads across the man-made ice floe to where it meets the bottom of the brick containing wall, down which was dropped the apple core, out of the hands of some environmentally ignorant zoo-goer. Suddenly, a tobogganing penguin slides in front of the lemur, crashing into the wall right next to the apple core. The lemur, perceiving the penguin to be competing for her food, becomes upset and approaches the penguin as if to attack. The penguin, seeing the approaching lemur, begins to harbour intense distaste for the lemur’s intrusion into the penguin’s territory.

As stated in Huntingford and Turner’s *Animal Conflict*, “how animals fight depends on the physical equipment they have at their disposal.”<sup>28</sup> As this fight gets underway, let’s take a look at what weaponry, defense mechanisms, and fighting styles each creature possesses.

We’ll begin with the Adelie penguin. This bird’s flippers are very hard, comprised of flat bone with only skin and thin feathers on top. The Adelie penguin is also the owner of a particularly sharp beak.<sup>29</sup> It attacks by biting the opponent fiercely, and using its thick, strap-like wings to beat him furiously. Dave Houston, an Antarctic researcher who was once attacked by a penguin, says that “the closest thing to being beaten up by a penguin is being grabbed with a pair of needle-nosed pliers and beaten with sandals!”<sup>30</sup>

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<sup>26</sup> Richard, op. cit., p. 296

<sup>27</sup> Allen, op. cit., p. 343

<sup>28</sup> Huntingford, op. cit., p. 40.

<sup>29</sup> Dargaud, op. cit.

<sup>30</sup> Houston, Dave (1997-2003). *Frequently asked questions*. Retrieved March 28, 2004 from <http://www.penguin.net.nz/faq/faq.html>.

For protection, “their stiff, close-packed feathers grow thickly all over the body”. These feathers form “a thick insulating mat with a smooth, shiny surface”. However, because of the way their bodies are, on land, they are forced to stand upright and hop, or to waddle clumsily with short steps.<sup>31</sup> Their defense mechanisms involve “loud braying calls, threatening attitudes (body moving side to side)”.<sup>32</sup> Penguins are also very social creatures, residing in colonies that can consist of up to 200, 000 penguins. In these colonies, penguins rally together to defend and flee from attacks by leopard seals, their main predatorial threat.<sup>33</sup>

The ring-tailed lemur, unlike the clumsy penguin, is exceptionally agile. Its hands and feet are adapted for grasping, and it has “flat nails on all digits except the second toe, which instead has a long claw.”<sup>34</sup> It attacks noisily, making loud, rapid grunting noises, and will pull the hair on the top of its opponent head.<sup>35</sup> Other than these things, the lemur doesn’t seem to possess much fighting skill. Its fighting style is quite unique, almost to the point of being disappointing. The Dublin Zoo describes the ring-tailed lemurs fighting style like this:

“Rather than having a physical fight that could result in serious injury, they fight with their personal smells. Male ring-tailed lemurs have special scent glands under their armpits and on the inside of their wrists. They pull their tails under their arms and rub their wrists onto the tail and when they have collected enough

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<sup>31</sup> Austin Jr., op. cit., p.27.

<sup>32</sup> Dargaud, op. cit.

<sup>33</sup> Wilson, op. cit., p. 118

<sup>34</sup> Idem.

<sup>35</sup> Devore, op. cit., p. 308.

scent they wave their tails at their opponent, sending their smell to him. We assume that whoever has the strongest smell, wins!”<sup>36</sup>

This fighting style, however, is more ritualistic, and takes place primarily between fellow lemurs, not outsiders. It remains possible that a lemur might be able to deviate from its ‘stink fight’ in the face of a more dangerous opponent. While the lemur seems to possess the capacity to be a stronger aggressor, its ‘physical equipment’ is used mostly for climbing and gripping the trees it inhabits. Lemurs are vegetarian, feeding on plants and fruit, rarely even killing insects for food. Their inexperience with aggression against other animals is extremely limited, thus making it seem unlikely that it would know how to deal with an aggressor.

Down by the apple core, the Adelie penguin and the ring-tailed lemur are facing each other head-to-head. The lemur begins to rub his tail inside his armpits and over his wrists, while the penguin stands up and begins braying loudly, waddling towards the lemur. The lemur becomes upset, and his grunts turn into a loud cry of “crou-crou-cou-crouou-crouiiii!”<sup>37</sup> The penguin reaches the lemur, and strikes out with its beak, delivering a glancing blow to the lemur’s face. The lemur’s cry is stopped short, and he flicks his tail about angrily. A trickle of blood runs down his cheek, and the lemur backs up a little. In doing so, he bumps into another penguin nearby. This second penguin stands up to its full height of 2 feet, and now two penguins loom on either side of the lemur, who is growing increasingly more frightened. He strikes out a claw at one of the penguins, but the claw merely sinks into its thick layer of feathers, without even touching

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<sup>36</sup> Dublin Zoo (2002). *Ring-tailed lemurs – stink fighters!* Retrieved March 28, 2004 from [http://www.dublinzoo.ie/come\\_pick\\_lemurs.htm](http://www.dublinzoo.ie/come_pick_lemurs.htm).

<sup>37</sup> Devore, op. cit., p. 302.

skin. The first penguin begins to beat him rapidly with its flippers, causing the lemur to scream loudly. The other six lemurs in the tree above him have noticed, and have begun screeching at a similar volume. In the excitement, all six of them jump down from the treetops, and surround the two penguins. They begin grunting and crying in unison, tugging on the feathers of the penguins with their hands, and biting into fistfuls of it. The two Adelie penguins, becoming more and more provoked, have started braying even louder. More penguins in the display are waddling over, and before long, the penguins outnumber the lemurs again, 10 to 7. Unable to withstand the pressure of such rapid flipper movement against their small bodies, the lemurs reach the point of desperation. Of the seven, three are already bleeding from wounds sustained from the sharp penguin beaks. Only one penguin is bleeding, its white fur stained red from a claw that managed to penetrate its layer of feathers. More penguins are waddling over, some swimming through the nearby water channel and diving onto the land where the battle is taking place. The lemurs have lost focus and now begin frantically trying to escape. A branch hangs over the penguin enclosure, just within reach. The seven lemurs scramble for the branch, one after another. As the last lemur dives for the branch, he clammers over the head of one of the penguins, accidentally clawing into one of its eyes with his foot. The penguin catches the same lemur's leg in its beak and drags it back to the ice. He is surrounded, and after a flurry of flippers and beaks pummeling his body, collapses to the ice. The force of the penguins attacking him pushes him to the brink of the ice, and he falls into the icy water. Unable to swim, and with no fellow lemurs to rescue him, he flails about as penguins swim up beneath him to peck at him from the water. Within minutes, the lemur is dead.

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