How ants persuaded lions to eat buffalo

文章导读：蚂蚁在食物链中起着重要作用，它们既是食物链的消费者，也是食物链的生产者。作为消费者，蚂蚁会捕食其他昆虫、植物和动物的尸体，从而控制了它们的数量，保持了生态系统的平衡。而作为生产者，蚂蚁会通过挖掘地下隧道和堆积土壤，改善土壤通风和排水，促进植物生长，为其他生物提供了食物和栖息地。此外，蚂蚁还通过携带种子、清除有害生物和促进土壤肥沃度的方式，间接影响了食物链。它们的活动可以促进植物的繁殖和生长，为其他生物提供了更多的食物来源。总的来说，蚂蚁在食物链中扮演着重要的角色，它们通过捕食和被捕食，以及改善土壤和促进植物生长等方式，影响着整个生态系统的平衡和稳定。

[1] A tale of elephants, thorn[1] trees and the sensitivity of ecosystems	1. **Thorn** [θɔ:rn] n. 刺，荆棘；苦恼，痛苦
[1] 大象、荆棘树和生态系统敏感性的故事	

[2] THE ANT AND THE ZEBRA"sounds like the title of one of Aesop's fables[2].Like all good fables,this one has a moral,which is that tinkering[3] with nature has unpredictable consequences. Unlike the Greek originals,though,which were allegories[4],this fable is real.	2. **Aesop's fables** [ˈiːsəps ˈfeɪbəlz] n. 伊索寓言 3. **Tinkering** [ˈtɪŋkərɪŋ] n. 修补；琢磨 4. **Allegories** [ˈælɪgɔːriz] n. 寓言，讽喻
[2]《蚂蚁与斑马》听起来像是伊索寓言中的一个寓言的标题。就像所有好的寓言一样，这本寓言有一个寓意，那就是对自然的修补会产生不可预测的后果。然而，与希腊原作中的寓言不同，这个寓言是真实的。	

[3]The story plays out in Laikipia county, Kenya,not far from the mountain which gave that country its name.The characters include big-headed ants (an invasive species of obscure[5] origin),the native acacia ants[6] these interlopers[7] have gradually been replacing,the whistling-thorn trees in which both sorts of ants live,a cast of elephants,lions,zebras[8] and buffalo[9],and Douglas Kamaru,a Kenyan biologist who currently has a berth[10] at the University of Wyoming.As Mr Kamaru and his colleagues report this week in Science,the ant invasion has triggered a convoluted[11] chain of consequences which has helped zebras at the expense of buffalo-thus neatly[12] illustrating a phenomenon called "trophic cascade".

[3]故事发生在肯尼亚的莱基皮亚县，离赋予这个国家名字的那座山不远。书中的人物包括大头蚁(一种起源不明的入侵物种)，被这些入侵者逐渐取代的本土金合欢蚁，这两种蚂蚁生活的鸣刺树，一群大象、狮子、斑马和水牛，以及目前在怀俄明大学(University of Wyoming)任职的肯尼亚生物学家道格拉斯·卡马鲁(Douglas Kamaru)。正如Kamaru 先生和他的同事本周在《科学》杂志上报道的那样，蚂蚁入侵引发了一系列错综复杂的后果，以牺牲水牛为代价帮助了斑马——从而巧妙地说明了一种被称为"营养级联"的现象。

5. **Obscure** [əbˈskjʊr]
adj. 模糊的，晦涩的；无名的，不出名的

6. **Acacia ants** [əˈkeɪʃə ˈænts]
n. 金合欢蚂蚁

7. **Interlopers** [ˈɪntərˌloʊpərz]
n. 干涉者，闯入者

8. **Zebras** [ˈziːbrəz]
n. 斑马

9. **Buffalo** [ˈbʌfəloʊ]
n. 水牛

10. **Berth** [bɜːrθ]
n. 卧铺；停泊处

11. **Convoluted** [ˈkɑːnvəluːtɪd]
adj. 复杂的，费解的

12. **Neatly** [ˈniːtli]
adv. 整洁地，干净地

[4]It works like this.Whistling-thorns have co-evolved with the local ants.The trees provide the ants with shelter and food,in the form of large,hollow thorns into which they secrete[13] nutritious nectar[14] from special glands[15].The ants,meanwhile,protect the trees by seeing off the chief threat to them,the local elephants, which are not keen[16] to browse trees crawling with biting insects.

[4]它的机制是这样的。鸣刺树与当地的蚂蚁共同进化。这些树以中空的大刺的形式为蚂蚁提供住所和食物，蚂蚁从特殊的腺体分泌营养丰富的花蜜。与此同时，蚂蚁通过赶走对它们构成主要威胁的当地大象来保护树木，这些大象不喜欢在爬满叮咬昆虫的树上觅食。

13. **Secrete** [sɪˈkriːt]
v. 分泌，隐匿

14. **Nectar** [ˈnektər]
n. 花蜜；甘露

15. **Keen** [kiːn]
adj. 敏锐的；热心的

[5]Acacia ant strongholds[16] are thickly carpeted[17] with whistling-thorns.Big-headed ants,however,are not so good at keeping the elephants at bay[18].The pachyderms[19] move in and munch[20] the trees,removing much of the area's cover.That discombobulates[21] the local lions,which often use this cover to hide when hunting zebra.To compensate,the lions switch to hunting buffalo,which are more dangerous,but less fleet[22] of foot.

16. **Strongholds** [ˈstrɔːŋhoʊldz]
n. 要塞，堡垒,据点

[5]金合欢蚁的据点覆盖着厚厚的鸣刺树。然而，大头蚂蚁并不擅长让大象陷入困境。厚皮动物进入并咀嚼树木，使该地区的大部分覆盖物消失。这让当地的狮子感到困惑，它们在捕猎斑马时经常用这个掩护来隐藏。为了补偿，狮子转而猎杀水牛，水牛更危险，但脚步不那么敏捷。

17. **Carpet** [ˈkɑːrpɪt]

v.给…铺上

18. **Keeping...at bay**

v. 使…不靠近

19. **Pachyderms** [ˈpækɪdɜːrmz]

n. 厚皮动物

20.**Munch** /mʌntʃ/

v. 用力咀嚼，大声咀嚼(脆的食物);

21. **Discombobulates**
[dɪs.kəmˈbɑːbjəˌleɪts]

v. 使困惑，使不安

22. **Fleet** [fliːt]

n. 舰队；车队；v.掠过；漂移；消失
Adj.敏捷的；快速的；飞逝的

[6]Mr Kamaru has put numbers to the process,too.In invaded areas,elephants browse and break trees five to seven times as often as in uninvaded[22] ones.And in those uninvaded places,zebra kills are almost three times as frequent as in the invaded ones. Indeed,between 2003 and 2020,as the big-headed ants have spread, the proportion of local lion kills where the victim was a zebra fell from 67%to 42%.Conversely,over the same period, the proportion of kills that were buffalo rose from zero to 42%.Whether the buffalo blame the ants for their misfortune[23],no one knows.

22. **Uninvaded** [ˌʌnɪnˈveɪdɪd]
adj. 未受侵略的

23. **Misfortune** [mɪsˈfɔːrtʃən]
n. 不幸，灾祸

[6]Kamaru 先生也对这一过程进行了统计。在被入侵的地区，大象啃食和折断树木的频率是未被入侵地区的五到七倍。在那些未被入侵的

地方，斑马的杀戮频率几乎是入侵地区的三倍。事实上，在 2003 年到 2020 年之间，随着大头蚁的蔓延，当地狮子杀死斑马的比例从 67%下降到 42%。相反，在同一时期，水牛被杀的比例从零上升到 42%。没人知道水牛是否把它们的不幸归咎于蚂蚁。

一、内容概括

In Laikipia county, Kenya, an invasion of big-headed ants has disrupted the ecosystem, leading to a trophic cascade. The ants have displaced native acacia ants, affecting the whistling-thorn trees they inhabit. As a result, elephants have begun to destroy the trees, impacting the habitat of lions and zebras. The lions, deprived of cover, have shifted from hunting zebras to hunting buffalo, which are less agile but more dangerous. This has led to a decrease in zebra kills and an increase in buffalo kills. The invasion of the big-headed ants has caused significant changes in the local ecosystem, illustrating the unpredictable consequences of interfering with nature.

在肯尼亚的莱基皮亚县，一种大头蚂蚁的入侵破坏了生态系统，导致了营养级联。这些蚂蚁已经取代了本地的金合欢蚁，影响了它们栖息的呼啸刺树。结果，大象开始破坏树木，影响了狮子和斑马的栖息地。失去掩护的狮子已经从捕猎斑马转向了捕猎水牛，后者不那么敏捷，但更危险。这导致了斑马死亡的减少和水牛死亡的增加。大头蚁的入侵给当地的生态系统带来了巨大的变化，说明了干扰自然的不可预测的后果。

二、积累表达

1. 表达"使....不靠近"

1.1 Keep at arm's length from
He always keeps his colleagues at arm's length.
他总是与同事保持距离。

1.2. Maintain a safe distance from
It's important to maintain a safe distance from wild animals.
与野生动物保持安全距离很重要。

1.3. Keep clear of
You should keep clear of the construction site.
你应该远离建筑工地。

1.4. Give a wide berth to
I always give a wide berth to that unfriendly neighbor.
我总是远离那个不友好的邻居。

1.5. Keep away from
Keep away from the edge of the pool, it's slippery.
远离游泳池边缘，很滑。

2. 表达"敏捷的、快速的"

2.1. Agile
The agile cat easily jumped onto the roof.
 敏捷的猫轻松地跳上了屋顶。

2.2. Nimble
The nimble gymnast performed a perfect routine.
敏捷的体操运动员表演了完美的动作。

2.3. Quick-footed
The quick-footed soccer player dribbled past the defenders.
敏捷的足球运动员运球过了防守球员。

2.4. Fleet-footed
The fleet-footed deer darted through the forest.
敏捷的鹿穿过了森林。

2.5. Spry
Despite his age, he's still spry and active.
尽管年纪大了，他仍然敏捷活跃。