参考译文

This is Scientific American's 60-second Science, I'm Eliene Augenbraun.

这里是科学美国人――60秒科学系列，我是艾琳·奥根布劳恩。

Every Thoroughbred horse alive today i﻿s descended from three stallions and a larger selection of mares in 17th- and 18th-century England. Since then, no horses outside this lineage have been permitted to enter the bloodline. That's a problem.

今天存活的每匹纯种马，都是17世纪和18世纪三只种马和英格兰母马较大范围选种的后代。自那时起，这一世系外的马匹都不允许进入这一血统。这是个问题。

"We analyzed genetic diversity at thousands of genetic markers across the entire genome in more than 10.000 Thoroughbred horses from all of the major breeding regions of the world. This is the largest set of horses that's been examined in this way to date."

我们分析了整个基因组的数千个基因标记的遗传多样性，这些基因来自全球所有主要繁殖地区的1万多只纯种马。这是迄今为止用这种方法检测的最大规模马匹。”

Emmeline Hill, professor at University College Dublin and chief scientist, with an ownership stake, at an equine science company called Plusvital.

都柏林大学学院的教授兼首席科学家艾米琳·希尔说到，她拥有Plusvital马科学公司的股份。

"And what we found was that there has been a highly significant increase in inbreeding in the population over the last 45 years and probably the greatest increase in inbreeding is seen in the last 10 or 15 years."

“我们发现，过去45年，纯种马群中近亲繁殖的数量显著增长，可能在过去10年或15年里，近亲繁殖的增长幅度最大。”

Thoroughbred horse production is tightly controlled. Artificial insemination is not permitted, which means that breeding stallions get moved around a lot for meetups with females. These so-called shuttle stallions can mate with hundreds of mares per mating season. And there are two mating seasons: one in the northern hemisphere and the other in the southern.

纯种马生产受到严格控制。人工授精是被禁止的，这意味着种马要大量奔波，与母马会面。每个交配季节，这些所谓的穿梭种马可以与数百匹母马交配。存在两个交配季节：一个在北半球，另一个在南半球。

"In our study, 97 percent of the horses traced back to a single horse called Northern Dancer, arguably the most successful stallion of the 20th century. And his descendants have been the dominant sire lines in Australia and Europe for the last 25 years."

“在我们的研究中，97%的纯种马可以追溯到一匹名为‘北方舞蹈家’的马，它可以说是20世纪最成功的种马。过去25年，其后代一直是澳大利亚和欧洲的主要父系。”

Northern Dancer won the Kentucky Derby in 1964.

1964年，“北方舞蹈家”在美国肯塔基赛马大会上夺得冠军

Breeding pairs are chosen for their athletic prowess and competitive behavior, leading to strong selection for genes related to muscle performance and behavior.

选择繁殖对需要考虑的是运动能力和竞争行为，而这明显选择的是与肌肉表现和行为相关的基因。

"Traits that all have to come together in the optimal fashion to produce an elite athlete."

“所有这些特征必须以最佳方式结合起来，才能产生出精英运动员。”

But without genetic diversity, you can get health and behavior issues related to inbreeding.

但如果没有遗传多样性，就会产生与近亲繁殖有关的健康和行为问题。

"The Thoroughbred is unusual in that most managed animal and even plant-production systems have genetic monitoring in place. But the Thoroughbred has no genomic selection or population management that is addressed at an industry-wide level."

“在大多数受管理的动物中，纯种马是不寻常的，因为就连植物生产系统都配有基因监测。但纯种马没有整个行业能解决的基因组选择或种群管理。”

The study by Hill and her colleagues is in the journal Scientific Reports.

希尔和同事的研究发表在《科学报告》期刊。

Hill's genetic testing system is available through her company.

希尔的公司能应用基因检测系统。

"With the DNA of a mare and the DNA of a stallion, we can make in silico predictions about the likely level of inbreeding in the hypothetical foal that might arise from that mating."

“凭借母马的DNA和种马的DNA，我们可以进行对这种交配可能产生的理论马驹的近亲繁殖水平进行生物预测。”

听力原文

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