Science & Environment

Dogs 'can trace origins to Central Asia'

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Dogs may have become man's best friend in Central Asia, according to the study

Today's dogs can trace their origins to Central Asia, according to one of the most comprehensive genetic surveys yet.

Dogs are the most diverse animal on the planet - a legacy of thousands of years of selective breeding by humans.

But they derive from wild wolves that were gradually tamed and inducted into human hunting groups - perhaps near Mongolia or Nepal.

The findings come from an analysis of DNA from thousands of pooches, and are published in PNAS journal.

Cornell University's Dr Adam Boyko and his colleagues studied 4,676 purebred dogs from recognised breeds, as well as 549 "village dogs" - free-ranging animals that live around human settlements.

> *They hitched themselves to us, which was a pretty good gamble as it turned out*
> *(Dr Adam Boyko, Cornell University)*

This latter group are the least studied, yet represent a crucial piece in the picture of modern dog diversity.

"The fact that we looked at so many village dogs from so many different regions, we were able to narrow in on the patterns of diversity in these indigenous dogs," Dr Boyko told BBC News.

Dog domestication is the kind of event that could have taken place independently in

different corners of the globe. But the DNA of modern pooches doesn't provide any support for this idea.

"We looked exclusively to see if there was evidence of multiple domestication events. And like every other group that's looked for that, we found no evidence of it," said Dr Boyko.

"It looks like there's a single origin, although there are clearly situations where there has been... a little bit of gene flow between wolves and dogs post-domestication."

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Dog ownership is growing in popularity across many parts of Asia

AFP

A Tibetan mastiff dog is seen at a show in China's northern Hebei province

Confusing picture

The researchers studied genes that are located close to one another on dog chromosomes. The patterns of these closely linked genetic markers allowed the team to pinpoint the domestication event to Central Asia.

But several other teams have tackled the same problem, and have come up with widely differing results.

Previous studies have variously hinted at an origin for dogs in the Middle East - perhaps scavenging the food waste of early farmers - in East Asia, and in Europe.

The latest results are unlikely to resolve the argument, but Dr Boyko said that localising the origin of dogs could stimulate further research. One of these further lines of inquiry could be the analysis of ancient DNA from dog remains found at archaeological sites.

This tool could help support or refute hypotheses about the role of Central Asia and other regions in the domestication of "man's best friend".

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DNA studies have shown that modern dogs descended from their wolf ancestors

Most researchers agree that dogs have been around for at least 15,000 years. But the reasons for their emergence remain opaque.

"There's no doubt they were hanging around [hunting] camps and becoming gradually more attuned to human life. The question is what was the first step for why that was happening," said Dr Boyko.

"It's tempting to ask whether it was something to do with hunting. I think it's clear that scavenging by wolves on human kills [of large mammals] could have been the driving force.

He added: "If one of those wolf populations adopts genetic changes to facilitate that scavenging - things like tameness and small body size and early age of first reproduction, then they've started down an evolutionary course that's less compatible with a hunting lifestyle.

"They hitched themselves to us, which was a pretty good gamble as it turned out, because there are about a billion dogs in the world today and probably not even 10 million wolves."