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Will Tasmanian Tiger Clone Work?

Stewart Taggart

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SYDNEY, Australia -- A scientifically cocky bid to clone an extinct Australian marsupial back to life is one step closer to fruition. But that doesn't mean it's anywhere near possible, observers say.

Last week, Australian Museum geneticists announced they'd replicated bits of Tasmanian tiger DNA taken from a 136-year-old thylacine specimen preserved in ethanol since 1866. The thylacine, also known as the Tasmanian tiger, was hunted to extinction in the 1800s. The last known living specimen died in 1936.

The replication occurred through a process known as Polymerase Chain Reaction (PCR), which indicated bits of DNA retrieved from the specimen were of good enough quality they might be able to function in a living cell.

In and of itself, that doesn't mean reproductive cloning is possible. It just means researchers have avoided hitting an insurmountable wall, for now.

The next big step lies in assembling an entire genetic library of the animal. Such a library would, in turn, serve as a springboard toward reproductive cloning of the animal, probably through fertilizing an embryo implanted in a near species relative like the Tasmanian Devil. Independent observers are watching with interest. But they remain skeptical.

"I think it's fair to say they're in a 15-round fight, and they've survived through part of the first round," says Mike Westerman, a professor of Marsupial Molecular Evolution at Australia's LaTrobe University, who's familiar with the Australian Museum's research.

"Clearly, the hard stuff starts now."

Others, among them the researchers who brought the world Dolly the Sheep, are less diplomatic.

"There's about a snowball's chance in hell of this project being successful," says Harry Griffin, assistant director of Scotland's Roslin Institute. "But as a PR stunt, it seems irresistible."

Indisputably, the extinct animal cloning research project has proved manna from heaven as a profile-raiser.

By adroitly rebranding arcane genetic research into a kind of neo-sacred journey to restore lost Arcadia, the Australian Museum has magically attracted private funding to its work. It has also brought the attention of a major American documentary television channel, which plans to air a special on its cloning research in coming weeks.

Perhaps by coincidence, the museum chose to announce its most recent advance, small as it was, just weeks before the documentary was set to air.

It's all making conservationists a bit queasy. While they support popularizing science, and support genetic research into extinct species,- they do wonder whether hyping potentially unrealistic solutions such as cloning may be hurting the cause of conservation rather than helping.

"We should be concentrating on conserving living habitats and animals currently under threat, instead of trying to expensively recreate what's already been lost," says Nick Mooney, manager of Tasmania's Parks and Wildlife department. "Conservation, not cloning, is where the greatest value is right now."

He worries that people might become complacent about the declining state of the natural environment if they feel that cloning extinct species might one day be possible.

For his part, Australian Museum director Mike Archer is undeterred by the brickbats. He readily acknowledges the museum's cloning research may hit a dead end. But if it does, at least science will have identified unmapped frontiers for future scientists. He also stresses that cloning should at best be but one plank of an effort to reduce man's environmental footprint.

Conservation should be another, and that is not an either/or choice.

Lastly, he notes the museum's funding for cloning research came from private donations that probably wouldn't have been redirected dollar-for-dollar to conservation efforts if the cloning project hadn't moved forward. Therefore, he thinks such zero-sum comparisons are spurious.

That said, however, the 56-year-old Archer is good at creating expectation-raising sound bites.

"I fully intend to have a pet Tasmanian tiger well before I peg it (die)," Archer said last week at a press conference. "I would like to think it (a cloned pup) can happen in 10 years."

That seems optimistic. At this point, even assuming the research team is able to compile a partial library of the thylacine's genome, they will still need to fill in millions of potentially missing blanks, perhaps by replicating DNA from near relatives like the Tasmanian Devil.

How this might work is anyone's guess. And if it does, there will be little room for error. In the human genome, even very small errors in the DNA structure can result either in an inability to conceive, or birth defects in the baby. And even if birth does occur with an admixture of original thylacine DNA and bits borrowed from related creatures, the question becomes: What's really been created?

"Can we get the complete thylacine back? I'm not sure," Archer said at a public meeting. "Can we get something close? Maybe. And if we do, is that better than nothing? I think so."

But Dr. Jeremy Austin, an evolutionary biologist at the University of Queensland, said that if less than 100 percent thylacine is good enough, there are easier ways to skin the tiger, so to speak.

"If an approximation is all they're after, current cloning technology can do that," Austin said. "Why not just take a living near relative -- like the Tasmanian Devil -- and play with their hair color and head size through reproductive cloning and make them look like a thylacine?

"They may get something," he added. "But it won't be a full thylacine."