

## A&M researchers study Antarctic core samples

By JILL REED  
Science writer

Texas A&M researchers in the Ocean Drilling Program are studying Antarctic core samples to learn about the history of Earth's environment and to learn how to predict future global climate changes.

Dr. Peter Barker, a researcher with the Ocean Drilling Program, is a co-chief for a two-month leg of the ongoing climate study expeditions.

"We want to determine the history of the West Antarctic ice sheet for the last six to ten million years," Barker said.

Barker said it is important to understand the Antarctic ice sheet, which is a major component of Earth's climate system.

"When we prove the method works, the next step will be to look at the East Antarctic margin in the same way," Barker said.

The East Antarctic ice sheet is larger and over 30 million years older than the west sheet, he said.

Barker said this leg of the expedition will help resolve arguments about ice sheet stability.

"We need to understand the long-term history of the ice sheet and what caused it to grow, so we can know the short-term stability of the ice sheet for the next 50 years or so."

Geologists use nine-and-a-half-meter-long core samples to answer questions about changes in the global environment, crust movement and deformation, fluids and petrochemicals in the crust and evolution and extinction of ocean life.

"We need data from several locations to determine the full history, but this drilling leg will give us the proper method to do this," Barker said.

Sediment layers containing animal remains represent the periods of time when the Earth's

climate was hospitable.

Past deep-water core sample studies have determined that a huge meteorite crashed into the Earth 65 million years ago and the floor of the Atlantic is widening while the floor of the Pacific is shrinking.

Ocean-drilling research also has found that the Mediterranean Sea once dried up and later refilled

**"We want to determine the history of the West Antarctic ice sheet for the last six to ten million years."**

**Dr. Peter Barker  
Ocean Drilling Program**

and the Great Barrier Reef, off Northeastern Australia is less than one million years old.

Crews aboard the drilling vessel work twelve-hour shifts seven days a week drilling and analyzing core samples taken from up to 850 feet below sea level.

Each core sample represents up to ten million years of Earth's history.

Aaron Woods, a spokesperson for the Ocean Drilling Program, said Texas A&M is responsible for about half of the \$47 million appropriation funded by the National Science Foundation and other international interests.

Woods said A&M handles many facets of the program including ship operations, engineering and drilling operations, administration, publication of data and results, computer systems and core sample storage and curation.

## Baboon pair bonds early relative to human marriage, researcher says

By BRIAN VASTAG  
Special to The Battalion

Female baboons who align themselves with male "friends" to protect their young are leading researchers toward possible prehistoric origins of marriage.

"Marriage is far, far more than simply a mating relationship," said the University of Pennsylvania's Ryne Palombit, who studies pair bonds, the animal equivalent of marriage. "It has very important social aspects."

Throughout history, social reasons for marriage include forming alliances, sustaining culture and sharing food. Traditionally, researchers have focused on food sharing as the primary motivation for pair bonds, but Palombit believes his African baboon studies suggest another reason. Pair bonds may have evolved, both in animals and in early humans, to protect infants from murder.

Forty percent of baboon babies studied by Palombit on the grasslands of Botswana were killed by a single dominant male. This male kills to monopolize his mating opportunities.

After an infant is killed, its mother stops lactating and her regular menstrual cycle resumes. Within a few months, she is ready to mate again. Invariably, the dominant male mates with her. Through this killing and mating, the dominant male effectively replaces another baboon's offspring with his own, giving his genes improved chances for survival.

Primate infanticide, first reported by Sarah Hrdy at the University of California at Davis, intrigued Palombit so much that he has made several trips

to study it. After watching the chacma baboons, a subspecies of savannah baboons, Palombit observed males and females forming apparently non-sexual "friendships," or pair bonds. The pairs spent much more time together when infants were present, supporting the idea that male friends protected the infants. Palombit wanted to test this idea.

He and his colleagues considered waiting for infanticide attacks to see how the male friends responded. But when infanticides proved too difficult to observe, they decided to simulate infanticide. Using hidden speakers playing recordings of male attack cries and female distress screams, the researchers ran a series of tests. They found that the male friends responded more aggressively to the simulated attacks than other male baboons: More support for the theory that friendships serve to protect the young.

Our early human ancestors may have been infanticidal as well, Palombit said. Chimpanzees, which share over 98 percent of our DNA, are occasionally infanticidal and baboons live in a savannah environment much like that of early early humans. These two factors support speculation that our ancestors were infanticidal, and that pair bonds — and later marriage — evolved for infant protection, Palombit said.

Though it is easy to envision a past where males and females bonded to save the children, it is tough to find evidence.

"It is difficult to know if people were infanticidal in the past," Palombit said, "since there are no fossils of

prehistoric wedding certificates."

Another problem with is that no one knows who baboons protect the infants. Paternity tests, which he run on his next trip, promise to help explain male friends fathered, they are protecting, their evolutionary common, they are not the fathers, researchers will need other

Lee Cronk, a Texas A&M professor, said there's answer for the origins of

"What works for one

not work for another," Palombit's work with mates like gibbons, which groups much like reports Cronk's statement form pair bonds without sure of infanticide; the reasons for pairing.

People probably de-riate for many reasons, are multiple evolutionary bonds," said Palombit, need to be open to them.

He added that addition on baboons, including paternity tests, will come to a better understanding and human pair bonds.

Palombit presented at the annual meeting of the American Association for the

ment of Science last in a chacma baboon study published in the journal Anthropology later this

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