

## Female infanticide: Northern exposure

Western explorers and anthropologists who trekked to the harsh lands of northern Alaska and Canada early in this century made a disturbing observation: Boys greatly outnumbered girls in the various Eskimo communities known as Inuit, apparently reflecting the widespread practice of killing girls at birth or shortly thereafter.

Researchers still dispute the reasons for this, and a growing number suspect that demographic blunders created a false impression of female infanticide. But the first study to reconstruct Inuit age and sex characteristics from census data gathered between 1880 and 1930 indicates that, on average, the Inuit intentionally killed one out of five baby girls.

Reliance on female infanticide varied with the scarcity of game and the need for risk-taking male hunters, who could provide for their parents and siblings as well as their wives and children, propose two anthropologists at the University of Washington in Seattle.

Although raising an Inuit boy demanded more time and resources from parents than raising a girl, analysis of the census data suggests that — in groups that depended almost solely on hunting for survival — boys eventually repaid parents and other close relatives by sharing food and helping them catch

game, contends Eric Alden Smith, who conducted the study with S. Abigail Smith.

Systematic female infanticide disappeared in Inuit groups as European industry reduced reliance on hunting in Arctic areas, the researchers add.

Their report, published in the December *CURRENT ANTHROPOLOGY*, includes "model life tables" calculated from census data for 2,718 individuals in 10 historic Inuit populations. Key data in these tables consist of estimates of child and adult sex ratios, adult mortality, a measure of parental time and effort necessary to raise boys relative to girls, and death rates for baby girls.

The new analysis raises serious doubts about other theories to explain Inuit female infanticide, the Smiths argue.

For instance, a group lacking effective birth control methods might kill some baby girls to regulate population growth when resources prove scarce. However, ethnographic as well as census data indicate that the historic Inuit suffered periodic food shortages that created intermittent needs for population replacement, the Smiths argue.

Another proposal cites the need to avoid raising too many females in the face of high death rates for adult males. But the Smiths found no marked differ-

ence in life span for Inuit men and women. Neither sex could expect to live beyond about 35 years in the severe Arctic environment.

Psychoanalytic theories that posit a culturally rooted effort by Inuit fathers to maintain male dominance cannot account for the wide variability in female infanticide from one Inuit group to another or ethnographic observations that mothers and grandmothers helped make infanticide decisions, based on the need for male hunters, say the Washington scientists.

Problems also arise for the argument that early census takers simply misinterpreted a situation in which girls got married and were classed as adults at much younger ages than boys, creating an illusory lack of female children, they hold.

Marriage ages for the sexes remained relatively stable across Inuit groups, while ratios of boys to girls varied greatly, the Smiths say. By shifting enough Inuit women into the "girl" category to even child sex ratios, the investigators ended up with men greatly outnumbering women; adult female mortality rates were not high enough to justify this pattern.

"This is not the final word on Inuit sex ratios," Eric Smith remarks. "We hope that it is a useful interim assessment."

— B. Bower

## When this fly arrives, ants' heads roll

Small and fragile, phorid flies need a head start in life — literally.

Mom accommodates by injecting a fly egg into an ant. Within 2 days, the emerging maggot crawls into its host's head, where it eventually seals shut the ant's mouth. After about 2 weeks, the growing maggot devours the interior of the ant's head, while an enzyme breaks down connective tissue to the point where the head falls off. This heady incubator protects the larva for another couple of weeks as it transforms into a millimeter-long adult.

Two teams of biologists have just identified a family of these flies that makes *Solenopsis invicta*, a South American fire ant, its exclusive childhood home. Their finding suggests a possible strategy for

controlling the northward advance of the ant, whose renowned stings raise pus-forming welts, notes Sanford Porter of the U.S. Department of Agriculture's Agricultural Research Service in Gainesville, Fla. Unlike the two species of fire ant native to the United States, *S. invicta* has successfully distanced itself from natural enemies.

Ships docking in Mobile, Ala., launched two pioneering *S. invicta* invasions of the United States. One family of black ants disembarked around 1918 and expanded into Mississippi. A more intrepid, red family entered during the 1930s. Now in 11 southern states, it continues to spread. Both forms became entrenched by muscling out the local competition, explains Lawrence E. Gilbert.

This ecologist, who directs the University of Texas' Brackenridge Field Laboratory in Austin, has watched *S. invicta* reduce the native species of ants at the field station from

55 to just 3.

While working in Brazil with researchers from São Paulo State University in February, Porter noticed that some phorids attack *S. invicta* fire ants. Moreover, they devour and decapitate the ants in the same way that related flies do native U.S. fire ants. These phorids attacked only *S. invicta* — not some 25 other, equally available ant species.

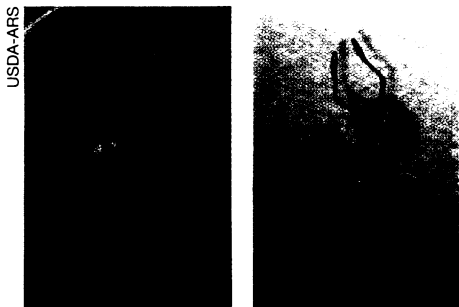
Work carried out at about the same time by Gilbert's team demonstrates that the Brazilian flies can be reared in captivity and that they will attack *S. invicta* immigrants to the United States.

Both teams have reports on these observations in press.

It's not the parasitizing as much as an inbred reaction to the threat of it that helps the flies control ants, Gilbert believes. As soon as ants spot their airborne nemesis, they freeze into a defensive posture and stop eating. He suspects that constant aerial reconnaissance by these flies can sufficiently disrupt the food supply of an ant colony to put the brakes on its reproduction.

Within the next year, Gilbert hopes to complete studies justifying the importation of some flies for use in field trials against *S. invicta*.

— J. Raloff



Brazilian fly (left), an *S. invicta* it has beheaded (middle), and a larval fly found in *S. invicta* head (right).