

Snouts: A star is born in a very odd way

The 22 pink rays that sprout from the snout of the star-nosed mole develop in a way unlike any other animal appendage, a Tennessee-based research team says.

The wiggling, touch-sensitive nose rays don't bud straight out from the body wall—the basic strategy for human limbs, insect legs, fish fins, sea urchin spines, and a huge range of other animal equipment, reports Kenneth C. Catania of Vanderbilt University in Nashville.

Instead, the sides of the mole's face swell into ridges that round into fat little cylinders embedded in the skin. After the moles are born, the cylinders come loose at the back end and spring forward to form the species' distinctive nose fringe.

In a sense, the rays end up backwards. Adult tissue that once lay toward the rear of the face turns into the ray tip, and what had been at the front becomes the ray's base. Catania and his colleagues document the process, with images of fetal and newborn moles, in the Sept. 30 *JOURNAL OF EXPERIMENTAL BIOLOGY*.

"Why would you peel up an appendage from the side of your face instead of growing it out, the way everybody else in the universe does it?" asks Catania.

This novelty offers a great opportunity for molecular investigation, he argues. The outgrowths in all other creatures so far studied rely on the same genetic tool kit, even in organisms as different as fruit flies and people. Does the mole nose's oddball development come from some novel function of these same genes? Or does the peculiarity signal a different suite of genes for limb formation?

"It's going to be interesting either way," comments Grace Panganiban of the University of Wisconsin-Madison, who studies the genetics of development. Like the Tennessee researchers, she can't think of a similar developmental trajectory. Catania's description was "fascinating," she says, and she, too, wants to know the molecular mechanisms.

The reversed orientation of the nose rays intrigues Catania. "If you were an en-

gineer drawing on a chalkboard, you would never think of developing limbs that way," he says. "When you can point to something that's done in a stupid way," it may signal how the process evolved, retaining bits of previous systems. Catania suspects that he's found a trace of history in a different mole species. It develops sensory strips on its snout, but they don't burst into stars.

Exotic as a star-nosed mole looks, the species burrows through most wetlands in the northeastern United States and ranges into Canada. The nose, with abundant nerves and skin only one-twentieth



A mature mole's nose (to right) checks out the world with 100,000 nerve fibers, outdoing the 17,000 or so in a human hand.

as thick as a person's, gives these moles what Catania ranks as "the most developed sense of touch of any mammal on the planet." —S. Milius

Social factors may make gay men suicidal

Several studies have found that homosexual men attempt to commit suicide at rates higher than those of heterosexual men or the U.S. population at large. Some investigators suggest that higher rates of depression and substance abuse among gay men account for their increased tendency to attempt suicide.

New work, however, indicates that a disproportionate number of homosexual men report suicidal behaviors regardless of whether they suffer from depression or substance abuse. Reasons for this tendency remain unclear, but the results are consistent with a major influence of family rejection and other social clashes on suicide attempts, says a team led by epidemiologist Richard Herrell of the University of Illinois at Chicago.

Herrell and his coworkers conducted telephone interviews with each twin of 103 pairs, ages 35 to 53. In each set of twins, one man had previously reported having at least one male sex partner after age 18 and the other reported having sex only with females.

The twins, including identical and fraternal pairs, were part of a larger investigation of substance abuse in approximately 3,400 twin pairs. All of them had served in the U.S. military between 1965 and 1975.

Nearly 15 percent of the participants with male sex partners had tried to commit suicide, compared with 4 percent of the heterosexual twins, Herrell's group reports in the October *ARCHIVES OF GENERAL PSYCHIATRY*. Homosexual twins also reported substantially more periods of contemplating their own death or the demise of others, wanting to die, and thinking about committing suicide.

After the researchers used statistical means to remove the effects of major depression and substance-use disorders, the homosexual twins still showed substantial elevation in all the measures of suicidal tendencies except wanting to die.

Another study, directed by psychologist David M. Fergusson of Christchurch

School of Medicine in New Zealand and reported in the same journal, suggests that suicide attempts and a variety of mental disorders—including major depression and substance abuse—occur particularly frequently in homosexual and bisexual young adults.

Data came from an investigation of 1,265 children in New Zealand whom researchers had tracked from birth until age 21. At that point, Fergusson's team interviewed them about their sexual orientation.

"Taken together with earlier studies, there can be little doubt . . . that homosexual orientation is associated with suicidality, at least among young men," notes Gary Remafedi, a psychiatrist with the University of Minnesota Youth and AIDS Projects in Minneapolis, in one of three published comments on the two new studies.

Scientists, however, still know little about suicide among homosexuals, Remafedi says. For instance, no data address whether the frequency of their suicide attempts peaks during adolescence or stays constant throughout adulthood. Nor are there good estimates of how often the suicide attempts of homosexuals result in death.

In another published comment, psychiatrist Richard C. Friedman of New York Presbyterian Hospital in New York City expresses caution about dismissing a role for depression in the suicidal behavior of homosexual men. More detailed interviews might have revealed a link between depression and suicide attempts in Herrell's sample, Friedman suggests.

Unfortunately, the researchers asked volunteers only about homosexual behavior rather than about the more informative issue of sexual attraction and fantasy, remarks psychologist J. Michael Bailey of Northwestern University in Evanston, Ill. Antihomosexual attitudes may partly explain higher rates of suicide attempts among gay men, Bailey says, "but this remains to be demonstrated." —B. Bower

Photos: Catania



During fetal development in star-nosed moles, little cylinders form on the sides of the face surrounding the two nostrils.