



D E N N I S H A W L E Y - P R O G R A M C O O R D I N A T O R

ANIMAL COURTSHIP RITUALS

SPECIAL POINTS OF INTEREST:

- Animal Courtship Rituals
- Mark Your Calendar

St. Valentine

A vertical graphic with the text "St. Valentine" written in a cursive font. To the right of the text are three hearts in shades of pink and orange, and decorative flourishes at the top and bottom.

It is Saturday night. You style your hair, spray on deodorant, and gurgle mouthwash. You tear through your closet for your best jeans, and then perform the curious ritual of checking yourself over and over in the mirror. What's it all about? Romance, of course.

On Saturday nights the world over, (and every other day of the week, for that matter), Romeos and Juliets of the animal kingdom--from ants to zebras--are also preening and "dating." Now biologists are discovering how brain chemistry affects animal mating styles, and are piecing together the many meanings of animal courtship rituals. Their consensus: Animals and humans who "fall in love" share more traits in common than ever believed.

For starters, new research shows that some mammals release hormones (chemicals that affect body functions) like those of humans falling in love. Also, many animals "flirt" just like teens--they dance, sing, dress up, offer gifts, spray chemical perfumes and, yes, even fight over each other. To top it off, biologists are finding that the "show-off" antics many male animals perform to nab mates serve a vital purpose: The female gets to judge just how suitable her admirer is before making any commitment--and mating with him.

Scientists now think the capacity for love is programmed into animal biochemistry--especially hormones. Animals and plants produce hormones in very small amounts, which have powerful effects on their organs and systems. Humans, for example, produce 30 hormones in various body organs, called endocrine glands, as well as in the brain and kidneys. Without hormones our bodies wouldn't grow or mature sexually. Hormones actually cause our hearts to speed up under stress, and help the body convert food into energy. When it comes to the role of hormones in choosing mates, scientists have recently zeroed in on the brain.

ROMANCE!

Take the prairie vole, a fluffy rodent that sticks with the same mate for life. When single voles meet, the female's brain releases a heightened dose of the hormone oxytocin, explains Sue Carter, a zoologist at the University of Maryland. Scientists have known since 1906 that oxytocin stimulates human female contractions during child birth. Now they think the hormone also acts as neurotransmitter, or chemical messenger in the brain's nerve cells, that can guide behavior and seal emotional ties. When oxytocin courses through the female vole's brain, she bonds with the male. Deprived of the hormone (in the lab), she ignores him!

Similarly, the male vole's brain releases vasopressin, a hormone that prompts him to bond with his mate and guard her and their young from predators. "You can't imagine how much time these animals spend together," Carter says. "They spend over half their time sitting quietly touching each other. The release of hormones seals the bond." If that isn't romance, what is? HOW TO

GET A DATE

Species of all kinds also exhibit what scientists call social behavior--they interact with each other in a wide variety of courtship rituals.

Sea horse pairs start each day by wrapping their tails around each other and performing a tango around a blade of grass. Some scientists believe that sea horses remain forever faithful to their mates. They've tried to persuade male and female sea horses to "cheat" in a tank full of sea horse "singles." But "married" sea horses seem to only have eyes for each other. (Perhaps most amazing is that male sea horses get pregnant and give birth!)

The next generation of sea horses will repeat their parents' romantic rituals. Scientists say that courtship behavior is often passed down from generation to generation. For creatures like sea horses, who spend no time with their parents after birth, courtship behavior is pure genetics, the result of "dance steps" passed down from one generation to another. Genes are chemical instructions in animal cells received from mom and dad. Of course, some young mammals pick up "dating" tricks by simply imitating their parents.

Courtship strategies evolve over long periods of time, usually based on what "works" for each species to survive, says Penny Kalk, a mammalogist at the Bronx Zoo in New York. These genetically inherited traits are known as adaptations. Evolution helps explain how cats of all kinds--from kittens to Siberian tigers--have adapted the same mating rituals. In a courtship dance, "the female runs, rolls, and lifts her rear up in the air," Kalk says. Apparently this "dance" evolved among biological ancestors of female felines to attract "cool cats."

Other animal courtship adaptations abound. You may surprise your date with flowers or candy. Male bowerbirds in Australia and New Guinea have inherited the know-how to build lavish bowers--walled chambers made of twigs, decorated with blue feathers, yellow flowers, and leaves. A choosy female "can come in close, check out the male, and make sure she's making the right decision," says Gerald Borgia, a zoology professor at the University of Maryland.

STINGING LOVE

Talk about "electric" love! Stingrays are flat fish with whip-like tails that have adapted a sensory system known as electroreception. A weak electric current flows from tissues in a ray's mouth, gills, and other body parts. Seawater acts like a three-dimensional wire, conducting the current through the surf. During mating season, females pile up in groups up to 50 rays high, forming "condominiums" in the sand. When females give off electric signals, males use their own electrical receptors to hone in on them. The males then circle the condos and try to pull out females for mating.

If you find the scent of cologne alluring, you're not alone. Since the female gypsy moth can't fly, she manufactures her own natural "perfume" to attract a far-away male. She releases chemicals called pheromones from a gland on her abdomen. The pheromones waft into the air, carrying a specific scented signal that lures only male gypsy moths. The male's antennae, each one covered with 15,000 pheromone-sensitive hairs, can detect a single molecule of the scent from as far as seven miles away!

DATING DANGERS

Sometimes the contest for mates gets downright nasty. Male elephant seals are cow-size mating machines that often claim a harem of 50 females. Once landing on a beach to mate, males test each other's strength to fight over females. Males let out loud warning cries to keep rivals away. If their alarm fails, watch out! Males slam their chests against rivals and rip at their necks with long canine teeth, resulting in a bloody bout. The loser flees--without the girl.

The mating game can also be deadly. At the sight of a female, a male praying mantis freezes in place. He gradually but cautiously moves toward her. Then he jumps on her and begins to mate. During mating, the female may twist around, bite off the male's head and eat it!

Why do animals--including --go through such trouble to find their mates? Biologists say that the strongest drive in any creature is the desire to preserve one's genes for eternity. "The bottom line is getting your genes passed on to the next generation," explains zoologist Borgia. Animals feel the need to pass on genes in the form of offspring, even if it means getting dumped, bruised, or beheaded. The species that try hardest have the best chance of survival. So dating and mating are a natural part of life on Earth.

Happy Valentine's Day!





Mark Your Calendars



- ♥ Geocaching for Beginners -February 18 at 2 p.m.
We are asking for a \$5 donation per person to help cover expenses
- ♥ Spring Work Day -April 14
- ♥ Earth Day Celebration -April 22
- ♥ Open house at the ELC- May 19



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**"Tell them, they forget.
Show them, they'll remember.
Involve them, they'll understand."**

The Crooked Creek
Environmental Learning Center

(ELC) is an organization
dedicated to promoting
environmental education and
resource conservation.

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