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Research Notebook

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Native crabs can contain spread of invasive species

Native crabs can stop the invasive green crab from spreading, a new study says. The authors say no previous research has shown that a native predator limits the range of an introduced species.

Researchers from the Aquatic Bioinvasions Research and Policy Institute -- a joint program of Portland State University and the Smithsonian Environmental Research Center -- found that native blue crabs, common in and south of the Chesapeake Bay, eat green crabs and curb their populations. They even prevent the invasive green crab from spreading south of Maryland, said Catherine deRivera, a PSU research biologist.

European green crabs, which eat native shellfish in near-shore waters, now live along both coasts of the United States. The crabs turned up in Coos Bay in 1996 and have reached Winchester, Yaquina, and Tillamook bays. The crabs were blamed for the collapse of Maine's soft-shell clam industry in the 1950s.

Future research by deRivera and her colleagues will focus on how native West Coast predators limit green crab habitat use. They also will work to eradicate the green crabs in Northwest bays as they still are relatively rare in the region.

Their study is in the December issue of Ecology.

Amino acid may raise risk of age-related blindness

Eye researchers in Portland and Boston say high levels of an amino acid linked to heart disease may also raise a person's risk for the main illness that blinds people 60 and older.

Age-related macular degeneration, or AMD, affects about 1.7 million U.S. residents.

Some evidence suggests that heart cardiovascular disease may share some roots with AMD, a problem with blood vessels in the eye. So Dr. Michael Klein of Devers Eye Institute in Portland and scientists with the Massachusetts Eye and Ear Infirmary tested blood for homocysteine, an amino acid known to mark heart disease.

The 547 patients with AMD had slightly higher homocysteine levels, on average, than 387 control subjects.

Vitamins B6, B12 and folate can reduce homocysteine levels, so the amino acid may be a controllable risk factor, though more research is needed to prove that, the researchers said.

Their study appears in January's American Journal of Ophthalmology.

Fungus-growing ants use bacteria to kill parasites

Ants that tend and harvest gardens of fungus have a secret weapon against the parasites that invade their crops: antibiotic-producing bacteria that the insects harbor on their bodies.

An international team led by Cameron Currie, a bacteriologist at the University of Wisconsin-Madison, found that the ants house the bacteria in specialized, highly adapted cavities and nourish them with glandular secretions -- an indication that the ants, bacteria, fungus and parasites have likely been evolving together for tens of millions of years.

Currie said that every ant species the team has examined "has different, highly modified structures to support different types of bacteria."

The study is in the current issue of the journal Science.

GPS, tail hair data used to track African elephants

Researchers have tracked the diet and movements of seven elephants in Kenya with radio collars and by analyzing their tail hair. The new tracking method is aimed at reducing human-elephant conflicts and determining where to establish sanctuaries.

The study involved analysis of isotopes of carbon and nitrogen in African elephants' tail hair to determine what and where they ate. They also were tracked with global positioning system collars.

Thure Cerling, a professor of geology-geophysics and biology at the University of Utah, and his colleagues analyzed foot-long hair in the tails of the elephants in Samburu National Reserve in Kenya.

The elephants had high ratios of nitrogen-15 to nitrogen-14, indicating they spent their time in Samburu's arid lowlands. Most of the time, they had low ratios of carbon-13 to carbon-12, indicating they ate trees and shrubs. But during the rainy season, they had higher ratios of carbon-13 to carbon-12 because they ate grasses that flourished in the wet weather.

The findings are in Tuesday's issue of the weekly Proceedings of the National Academy of Sciences.

-- Richard L. Hill and Andy Dworkin

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