

# Toxic slime, goo-spewing mouth, brain-eating parasites — oh my!

By Miami Herald, adapted by Newsela staff on 08.14.15

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Makiri Sei, a staff scientist at the Academy of Natural Sciences in Philadelphia, Pennsylvania, was looking before dawn for rare tropical snails at the Montgomery Botanical Center in Coral Gables, Florida, when she discovered this New Guinea flatworm in August 2014. Photo: Makiri Sei/TNS

MIAMI, Fla. — The New Guinea flatworm has a goo-spewing mouth on its belly, is covered in toxic slime, and is invading the United States. It can multiply anywhere, anytime.

This is not the plot to a new Hollywood movie. The New Guinea flatworm is real, and it poses a real threat.

Researchers last month confirmed for the first time that the flatworm has been found on the U.S. mainland in four locations in Florida. The worm is just 2 inches long and looks like a smudge of snot. Appearances are misleading, though. At mealtime, the worm is an agile predator, and it is already endangering South Florida's fragile native snail population.

"It is really vile," said David Robinson, the nation's chief malacologist at the U.S. Department of Agriculture. A malacologist is a scientist who studies snails.

As a malacologist, you would think Robinson would not be easily grossed out, but even he finds the New Guinea flatworm disgusting. “As a biologist I can handle most things, but I find this really revolting,” he said.

### **Creature Could Spread Anywhere In The U.S.**

The flatworm is listed by the International Union for Conservation of Nature as one of the planet's 100 most invasive species.

Species are considered invasive when they overrun new environments. If an invasive species multiplies too quickly, it can end up throwing off the balance of plant and animal life in the area and consume all of the area's resources.

Experts worry the New Guinea flatworm could spread in the United States by being transported in garden soil or on plants. “From Miami, the flatworm can go anywhere in Florida and anywhere in the U.S.,” said Jean-Lou Justine, lead author of a study on the potential impact of the flatworm that was published in June.

### **Flatworm Feasts On Soft Critters In Soil**

While the worm is no threat to humans, it feasts on snails and will eat any slug, worm or soft critter living in soil. It has an elaborate way of making meals out of snails. To get around the snail's armor, the flatworm latches onto the shell's opening, then spits out its own stomach through the mouth on its belly. An acidic goo from the stomach dissolves the snail's flesh, and the flatworm can then re-swallow both stomach and snail.

The worm, native to New Guinea, has now been documented in 22 countries, mostly island nations.

“In the beginning, we are going to find them mainly in gardens because they will be transported from garden to garden,” Justine said of the potential spread of the flatworm. “The real problem will be if they go into the wild.”

In his study, Justine said the worm was first reported in the United States in Miami on Southwest 122nd Street in June 2012. Four months later, another sighting was reported on Northwest Fifth Avenue. Two years passed before a third worm was reported on Southwest 192nd Terrace.

### **Fourth Florida Flatworm Was Found Last Year**

In August 2014, Makiri Sei, another malacologist, was in Miami looking for live tropical snails at the Montgomery Botanical Garden on Old Cutler Road. Sei, who works two offices down from Robinson, was studying snails' genes at the time.

Because it had been dry, another biologist suggested she look at night. So at about 4 a.m., Sei headed to a spot in the garden where the day before she had seen empty snail shells. Instead, Sei discovered a slimy flatworm and snapped a few pictures.

“I had no idea what they were,” said Sei, who had been to Florida only once before as a child. Back in Philadelphia, she showed the pictures to Robinson, who suspected Sei had found another flatworm.

## **Snails Have Also Caused Problems**

The New Guinea flatworm threatens to destroy snail populations, but snails have a history of invading new environments too. Robinson was hired as the first national malacologist in 1995 and has seen outbreaks of invasive snails threatening wheat crops in Montana, Detroit and Washington state. He has also been working with Florida officials to fight the spread of the massive African snails that can grow up to 8 inches.

“All through the country we have little outbreaks that come through quarantine barriers,” he said. “They come in on pretty much everything: cut flowers, imported fruits and vegetables.”

While the snails can easily hitch their own rides, Robinson said he also has to battle the food and pet trade intentionally spreading snails. The Giant African Land Snail first reached the U.S. when a Miami boy brought back three from Hawaii as pets and let them loose in his grandmother’s backyard. The snail spread, but after a \$1 million effort, by 1975 they were believed to have been all captured or killed. They are now back, and have spread into Broward County.

## **Flatworm Parasite Can Spread To Humans**

Like the Giant African Land Snail, the New Guinea flatworm carries disease. They both carry something called rat lungworm, a tiny creature that burrows into the brain and can spread to humans. In April, health officials confirmed one case in Hawaii.

Most people infected with rat lungworm suffer muscle aches and sensitivity to light but recover without ever knowing they have been infected. In severe cases, though, the brain can become infected.

The New Guinea flatworms are also coated in a toxic slime that can cause allergic reactions, so they should not be handled by humans.

## Quiz

- 1 Which of the following answer choices presents two central ideas from the article?
- (A) Scientists are searching for a toxic worm in Florida; the worm is considered invasive because it can spread too quickly in new environments.
  - (B) A dangerous flatworm has been discovered in Florida; the worm carries diseases that can eventually spread to humans.
  - (C) Flatworms and snails can both carry diseases that affect humans; flatworms are most dangerous because of their toxic slime coating.
  - (D) Most flatworms are native to New Guinea, not Florida; scientists are concerned that flatworms will spread disease to humans.

- 2 Which paragraph in the section "Flatworm Feasts On Soft Critters In Soil" would be LEAST useful for a summary of the article?

- 3 Read the following paragraph from the section "Flatworm Feasts On Soft Critters In Soil."

*"In the beginning, we are going to find them mainly in gardens because they will be transported from garden to garden," Justine said of the potential spread of the flatworm. "The real problem will be if they go into the wild."*

Why does the author include the above paragraph?

- (A) to compare the movement of invasive species to other studies
  - (B) to offer an outcome to the flatworm problem
  - (C) to make a prediction about future invasive flatworm problems
  - (D) to explain the flatworm problem in gardens
- 4 Review the first paragraph of the section "Snails Have Also Caused Problems." How does this paragraph contribute to the development of ideas in the article?
- (A) by stating a scientific conclusion
  - (B) by identifying the scope of a problem
  - (C) by giving a list of important statistics
  - (D) by identifying a solution to a problem

## Answer Key

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**Paragraph 11:**

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