

Beetle Seekers on International Quest for Rarest of Rare

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Montana State University entomologists with treasure maps and clues are on a global search for rare beetles this summer.

"These are the rarest of the rare, the most sought-after beetles there are in terms of understanding the evolution of the beetle tree of life," said entomologist Mike Ivie. "We are going after things every beetle person knows about, but nobody has."

Graduate student Ian Foley said the search is an attempt to fill in empty evolutionary spaces on the beetle tree.

"We don't know how the tree branches until we have these pieces," Foley said. "We are trying to complete the branches, and the more evidence we have the better."

Ivie, Foley and recent graduate Vince Martinson of Huntley will travel to six countries between June 21 and early August as part of a National Science Foundation project called the "Beetle Tree of Life." The project, an international effort to collect DNA, larva and adults from every beetle family, took the MSU group to Italy first, then India, Singapore, Malaysia, Vietnam and Korea. They have instructions for finding some of the beetles on their list, but not all.

"We will be lucky if we get three of the 25 things we are most interested in," Ivie said.

In Italy, the entomologists headed for an old chestnut grove on a hill south of Rome. Then, they dug 30 to 70 centimeters into the soil on the exact date that Italian entomologist Roberto Pace found three *Crowsoniela* beetles there in 1973, Ivie said. Those three are the only known specimens of this very primitive group. The Italian portion of their quest will be filmed by Sarah Jackson, a student in MSU's Science and Natural History Filmmaking program.

"He gave a very good description of how he got it," Ivie said of Pace. "We are trying to replicate that."

In Malaysia, the beetle seekers will stop by bus stations to ask vendors where they found the giant beetles they're selling to passengers. The MSU scientists want to find the larva of one commonly sold species, but don't know exactly where to look. They suspect the larva are found under the bark of logs in the cool Cameron highlands where Malaysians grow tea and spend their vacations. MSU is in a friendly competition to find the larva before a British entomologist finds them in Thailand.

"As soon as we see it, we will know it," Ivie said. "We think we know pretty much what it will look like, but no one actually has one."

In southern India, the entomologists will look around the trees some Czech entomologists drew on a map after finding an "extremely weird-looking" male beetle there. Scientists have never seen the female or larva.

"We are going after things every beetle person knows about, but nobody has," said Ivie who has been searching for some of his targets since 1985. "A whole bunch of these things I have known about, but never had an opportunity to get."

Ivie, Foley and Martinson will travel by plane, train and rented

automobile during their journey. Staying in inns, hotels and guest lodging, they'll be assisted by a graduate school buddy of Ivie's, researchers at a Singapore university, a USDA lab and others.

"It's going to be exhausting," said Ivie who talks of searching in Borneo, too.

The \$3 million project involves researchers from several institutions in a variety of countries. MSU's portion is approximately \$170,000 over three years, Ivie said.

The NSF is funding Ivie and Foley's trip. Jackson is funded through MSU's Science and Natural History Filmmaking program. Martinson is raising his own money.

"I figured I won't have the time to do anything in the next five years," said Martinson who graduated from MSU in December and will start a doctorate program in insect science in the fall at the University of Arizona.

He enjoyed a previous insect-collecting trip to the West Indian island of Montserrat with Ivie and Foley, Martinson said. Paying his own way will give him a chance, too, he said, to extend his trip to Mongolia and catch up with a former roommate.

Readers can see photos of the trip, follow the expedition's progress and ask questions of Ivie, Foley and Martinson at <http://msubeetlequest.blogspot.com/>

Source: Montana State University

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