Bounty hunters? Some groups claim that bioprospecting exploits indigenous people.

Political uncertainty halts bioprospecting in Mexico

Rex Dalton, Mexico City

International bioprospecting in Mexico has ground to a halt amid uncertainty about the new government's approach to the collection and export of plant samples, and a vocal campaign that has branded the activity as exploitative.

Two US-funded teams — each involving scientists from US and Mexican universities — have stopped searching for specimens because they cannot secure the appropriate permits from the Mexican government. A third effort involving scientists at the National Autonomous University of Mexico (UNAM) and Diversa, a Californian biotech firm, was halted earlier in the year.

The slowdown comes as Mexico undergoes a historic change of government, with Vicente Fox ending 80 years of rule by the Institutional Revolutionary Party when he becomes president next month. At the same time, the Rural Advancement Foundation International (RAFI), an advocacy organization based in Canada, has mounted a public campaign alleging that bioprospectors are exploiting indigenous people.

The blocking of the projects has dismayed US and Mexican scientists alike. "It is very unfortunate," says Joshua Rosenthal of the Fogarty International Center at the US National Institutes of Health (NIH), which funds the two projects. "What is required now is some clarity from the new government in Mexico."

Fernando Tudela, chief of staff for the Mexican ministry for the environment, natural resources and fisheries, says: "We share the frustration of the scientists. But Mexico lacks a legal framework for bioprospecting. I would not advise undertaking one of these projects now."

Tudela, who loses his post when the new government takes over, adds: "My advice to the next administration is to carefully draft a

plan for broad discussions of rules and guidelines for bioprospecting."

Brent Berlin, a University of Georgia ethnobiologist who has worked in southern Mexico for 30 years and whose project in Chiapas was recently blocked, says that "paralysis" has enveloped bioprospecting in Mexico. "The work is going to happen, but at a slower pace," says Berlin. His project involved interviewing Mayans in the highlands near Mexico's southern border, identifying the substances their healers use for therapies, and collecting plants for analysis. Identified active compounds then might be used for drugs or agricultural products.

Before the current impasse, Mexico had issued a handful of permits for scientific collections under the international Convention on Biological Diversity's guidelines for universities, biotechnology companies and indigenous people. One such permit allowed El Colegio de la Frontera Sur (ECOSUR) in Chiapas, working with Berlin, to collect about 5,600 plant specimens.

But RAFI and allies have branded the project "biopiracy", alleging inadequate Mayan participation. Berlin and ECOSUR scientists say that RAFI has maligned them unfairly. But when ECOSUR applied to Mexico's National Institute of Ecology for a permit to collect plant samples for bioassays for commercial products in September, after Fox's election, the institute made demands that the team found impossible to meet.

At the same time, US officials became concerned about another bioprospecting project, involving the University of Arizona and UNAM's Botanical Garden in Mexico City. Arizona had a contract with the pharmaceutical corporation American Home Products to develop any discoveries from the collaboration. But after problems arose with the Mayan project permit, the NIH's Rosenthal advised UNAM to halt the collections.

Online naming of species opens digital age for taxonomy

Henry Gee, London

The ancient art of taxonomy — the classification of organisms — will take a leap into the twenty-first century this month with the first publication of zoological names in an online journal. The move has radical implications for standards of access to archive material that taxonomists have accepted for almost 250 years.

The recipients of the new names are three species of fossil protists called foraminifera. They appear in a paper by David B. Scott of Dalhousie University in Halifax, Nova Scotia, and colleagues, to be published in *Palaeontologia Electronica*.

Taxonomy relies on access to archive material stretching back decades or even centuries. By convention, names created after 1758 — when the tenth edition of Linnaeus' *Systema Naturae* was published — must use the binomial nomenclature established in that work. They must also follow the principle of priority of publication enshrined in the International Code of Zoological Nomenclature — known in the trade simply as 'the Code'.

Until recently, the Code gave no quarter to the electronic age — to be valid, formal names had to be printed on paper. But its 1999 edition conceded that names created after 1999 may be valid if published "by a method that does not employ printing on paper", provided that numerous identical and durable copies are obtainable and that copies are deposited in at least five named libraries.

As well as library distribution, *Palaeontologia Electronica* will make 200 CD-ROM copies of the issue containing the paper available for a fee. The new name will become valid when the disks, are distributed, although it is intended that both versions will be issued simultaneously.

Despite the concession, the Code still emphasizes the "desirability of works on paper". The reason is clear — even if CD-ROMs were to last for centuries, hardware developments might make it difficult to find machines that can read them.

But Norman MacLeod of the Natural History Museum in London, who edits *Palaeontologia Electronica*, believes that electronic taxonomy will be "very much the rule" within a decade. "I would be severely depressed if in ten years I walk into an office and find a series of bound volumes of *PE* printouts," he says.

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