

Bio-prospectors probe Australian Aboriginal lore

June 8 2011, by Madeleine Coorey

When Aboriginal elder John Watson was bitten by a crocodile while fishing in the remote Australian Kimberley region, there was no doctor he could call, no medical kit on hand to stem the blood.

So he relied on the traditional knowledge of his people, passed down over the centuries from generation to generation, to help stop the bleeding from the injury to his hand which removed part of his middle finger.

Watson knew that if he chewed the bark of a native tree known as "mudjala", and spat the mixture onto his finger it would both numb the pain and stop the bleeding. And it did.

"Not only did it stop you from bleeding and the pain, it's also what we use ... (for) the pain we get in our hips or in our back. Sometimes you drink it, drink a little bit.. as long as you don't drink too much," Watson told interviewers last year.

The plant is one of many avidly studied by researchers and so-called bio-prospectors around Australia seeking to derive the next great medicine from the country's unique flora.

As the hundreds of Aboriginal languages which were once spoken around the vast nation quickly fade, and traditional knowledge is lost after two centuries of western settlement, the race is on to preserve native lore, including that related to the medicinal use of plants.

"The information is being lost irrespective of whether it's being used or not," says Professor Michael Heinrich, a researcher at Australia's Southern Cross University and the School of Pharmacy at the University of London.

"We need... to find a way where we can pass the indigenous knowledge onto [future generations](#)."

Heinrich said indigenous communities were rightly concerned about the handling of their traditional knowledge, some of which is sacred to their beliefs, and worried their generosity would not be recognised or rewarded.

This meant it was very difficult to get information on the plants used by [Aborigines](#) to treat illness and disease, he said.

"That's a very, very difficult area here in Australia and I think this is linked to the very unfair and total repression of Aboriginal people over two centuries in Australia," Heinrich said.

"We really have to remember that until the 1960s Australian native people didn't exist (in terms of being counted in the national census). And I think that's a very dramatic expression of the problem itself."

Australia has a unique plant and animal life, some of which has adapted to extreme conditions such as drought, and it is, to a certain degree, unexplored by Western scientists -- all of which makes it deeply alluring to bio-prospectors.

But the gaps in the detailed scientific studies so far completed are compounded by the fact that the field straddles various disciplines, including medicine, plant biology, chemistry, pharmacology and anthropology.

And the frustrations for researchers and native communities include the time it takes to get a discovery to market.

Heinrich cites the famous case of taxol -- a compound now widely used to treat breast cancer -- which was discovered in the 1960s but was not available as a drug on the market until more than 25 years later.

Then there is the problem of supply -- in the case of taxol, the compound was present in such small amounts in the tree from which it was derived that conducting a clinical trial would have wiped out some populations.

Researchers used a biotechnological approach to get the compound instead.

"I think there's a lot of potential there," said Heinrich. "We just have to be very conscious that it's not a fast project."

And finally there is the legal minefield of commercialising a product.

For Watson's Jarlmadangah Burru community in Australia's remote far northwest, ownership has been resolved through an intellectual property arrangement hailed as a breakthrough example for other communities.

The community initiated a research partnership with Griffith University, and the two are equal partners in the patent applications they hold.

The Australian government is hoping to help other [indigenous communities](#) and businesses protect their intellectual property through its Dream Shield project, and Watson's community is now seeking to commercialise the treatment -- possibly as a topical herbal product.

Professor Ron Quinn, a medicinal chemist at Griffith involved in the testing of the mudjala plant, said the active compounds it contained did

have analgesic properties.

He said traditional treatments generally related to medical problems in societies where life expectancy was lower than it is today, and included compounds to treat bacterial and fungal infections.

"You don't expect in a traditional medicine to find things that cure cancer or Alzheimer's disease," he said.

Quinn said he hoped the mudjala plant compound was commercialised because this would bring financial benefits to Watson's community.

"I hope this product gets on the market and makes money for them but even if it doesn't, there's a tremendous learning experience which puts them in good stead for other things," he said.

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