

Medicines from the Wild

It is said that when the wife of the Spanish viceroy of Peru fell ill with malaria in the 1600s, an Indian healer treated her with the bark of the cinchona tree. Whether this tale is true or not, the drug was then taken up by Europeans, who called it 'quinine', and it has been used to treat the disease ever since.

Indigenous groups, who have an intimate knowledge of their surrounding ecosystems, rely on nature for many aspects of their daily survival, including medicines. Western doctors owe these groups a much greater debt than they usually acknowledge.

Amazonian peoples in Brazil and Peru, for example, have long used the roots of the *Chondrodendron* vine for treating fevers and snakebites, and as a weapon. Hunters use arrows dipped in a liquid extracted from the roots. Once wounded, their prey falls to the ground and dies within seconds. Western scientists have adapted the drug, called curare, to make modern anaesthetics, and to treat multiple sclerosis and Parkinson's disease.

Ancient remedies

Similarly, indigenous peoples in Brazil have long employed the jaborandi plant for medicinal purposes, dubbing it the 'slobber-mouth plant' because it induces the rapid production of saliva and sweat. It is now used in Western medicine to treat cancer patients who suffer from dry mouths and throats as a result of radiation therapy, and by people who have Sjögren's syndrome, which prevents them from producing enough saliva. The plant helps to relax the eye muscles, and has been adapted for use in eye surgery and the treatment of eye diseases.

On the other side of the world, a substance called rauwolfia – made from the snakeroot plant that grows in the forests of India – has been used for thousands of years to treat mental and nervous illnesses. Western scientists adopted this indigenous cure in the 1940s.

Harvesting for health

Local medicines can be cultivated, or gathered from the wild. Many rainforest tribes maintain gardens to harvest important plants, and in South Africa people grow pepper bark trees and African ginger for medicinal use. However, in Indonesia, there is no need to raise fields of alang-alang (used to treat hepatitis), as this variety of cotton grass is one of the most common groundcovers in the country.

Around 25 per cent of the pharmaceutical drugs used in the West today come from plants, and many more are being developed as medicines of the future. For example, scientists believe that poison from the *Epipedobates tricolor* frog, which indigenous Ecuadorians use to make poison arrows, could give rise to a new painkiller to replace the use of morphine.

Local cures

Some 80 per cent of the world's people rely on their own culture's knowledge of medicines available from nature. Many cannot afford modern chemical medicines, but local treatments can often do the job as well or better. An investigation in Madagascar found that local cures, such as ginger for travel sickness and *Burasaia* sp. for fever, were more effective than their chemical alternatives.

The wealth of biodiversity in our planet's wilder places may well provide modern medicine with many of the cures of the future, as well as continuing to serve those who live among it and know it best.

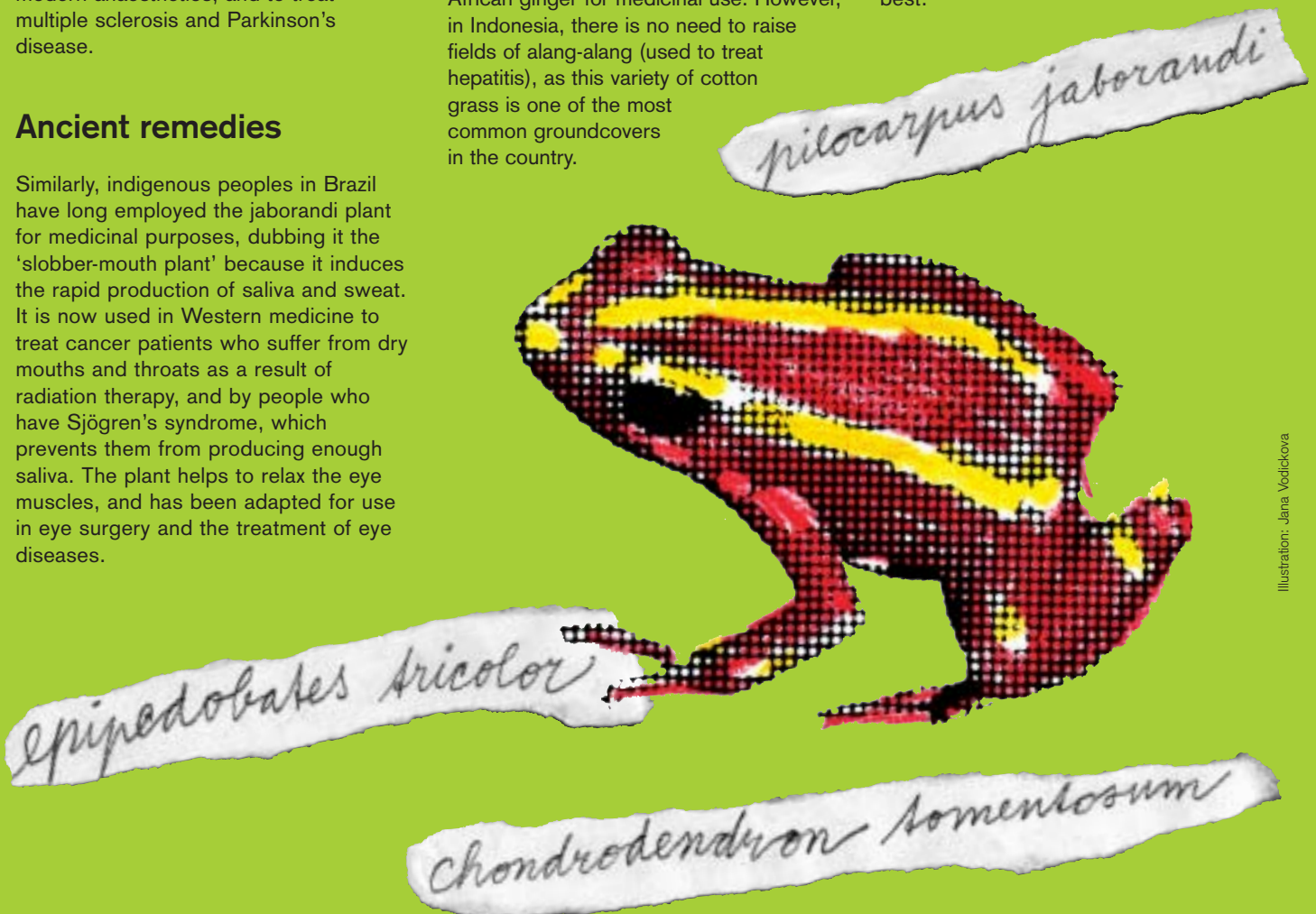


Illustration: Jana Vodičková

Protect the Arctic, save the planet

photo: Willard/UNEP/Topham

Sheila Watt-Cloutier grew up in the tiny Inuit community of Kuujjauq on the southern shores of Ungava Bay in the frozen north of Canada. Until she was ten years old she travelled on nothing faster than a sledge pulled by dogs.

Today Sheila Watt-Cloutier is the elected leader of the world's 150,000 Inuit people, who are scattered around the Arctic in Alaska, Canada, Greenland and Chukotka, Russia. She played an important part, with UNEP, in getting the world's governments to agree to phase out a 'dirty dozen' polluting, persistent chemicals that were contaminating her people. She is also campaigning against global warming. This is an edited extract from testimony she gave to the US Congress in September 2004.

'We are at the very cusp of a defining moment in the history of the planet. The earth is melting and we must all come together to do the right thing to address climate change.

While global warming is affecting the entire planet, there is a scientific consensus that it is impacting the Arctic much faster. Our elders have been experiencing these changes since the mid-1970s. The Inuit connection to the environment remains strong, and many of us still depend upon the land and sea to sustain our families. Our elders and hunters have intimate knowledge of the land, sea and

ice, and have observed disturbing changes to the Arctic climate, environment, and wildlife.

These include:

1. melting permafrost
2. longer sea-ice free seasons
3. new species of birds and fish – barn owls, robins, pin-tailed ducks and salmon – invading the region
4. invasions of mosquitoes and blackflies
5. unpredictable sea-ice conditions
6. glaciers melting, creating torrents in place of streams.

Our observations are confirmed by an official scientific assessment carried out by over 300 scientists and many indigenous peoples of the Arctic. This concludes that our ancient connection to our hunting culture may well disappear – within my grandson's lifetime.

Climate change is happening first and fastest in the Arctic. My homeland is the health barometer for the planet.

Looking at what is already happening in remote Inuit villages in Alaska – like

Shismaref near its easternmost tip, which is literally being battered to the point of falling into the sea – reveals the future dangers for more populated areas such as Florida, Louisiana or California.

If we can reverse the emission of the pollution that causes climate change in time to save the Arctic from the most devastating impact of global warming, then we can spare untold suffering for hundreds of millions of people around the globe.

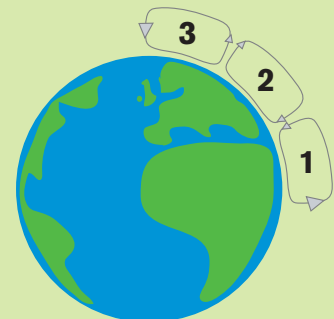
Global warming connects us all. Use what is happening in the Arctic – the Inuit Story – as a vehicle to re-connect us all, so that we may understand that the planet and its people are one. The Inuit hunter who falls through the depleting and unpredictable sea-ice is connected to the cars we drive, the industries we rely upon, and the disposable world we have become.

Climate change is a matter of the survival of humanity as whole. It is the most pressing global issue we face today. Protect the Arctic and we will save the planet.'

CHEMICAL REACTIONS

The Inuit of the Arctic, living in one of the least hospitable environments on earth, are an intensely resourceful people. They mostly eat local wildlife, such as caribou, musk oxen, polar bears, seals, whales, walrus and various types of fish. The Inuit require extra calories to keep them warm and active, and these local foods provide them with essential oils and nutrients that food imported from the south lacks. They also value maintaining the traditional ways of life of their ancestors, including hunting and fishing. Yet their food is also exposing them to toxic chemicals – persistent organic pollutants (POPs) – brought on the winds from countries far away.

These dangerous chemicals take a long time to break down and so build up in the food chain, working their way up into animals that people eat. POPs weaken the body's immune system, disrupt hormonal systems, and may cause cancer and other diseases. Inuit people have been found to have 10-20 times higher levels of POPs than people in more temperate areas. In response to this growing threat to their community's health, the Inuit people played an important part in ensuring the agreement of an international treaty, the Stockholm Convention, which was brokered by UNEP and which plans to phase out use of 12 of the most dangerous POPs.



Global distillation: how POPs migrate

- 1/ chemicals get into the atmospheric circulation cycle at lower latitudes where there is more pollution
- 2/ these toxins stay in the circulation currents for a long time and eventually travel northward
- 3/ toxins finally settle out of the atmosphere onto the polar ice caps