

WHAT YOU MAY HAVE MISSED – HERP NEWS AND MEDIA WATCH

(EDITED BY RAYMOND HOSER)

RAIDS, RAIDS, RAIDS.

North Queensland: In mid 1998, five herpetologists were busted at Iron Range with Green Pythons in their bags. Each side told a different story. The reptile people said that they were only photographing the snakes. The wildlife officials said that they were illegally trafficking them.

The result in court was curious to say the least. All five were found guilty as charged. None were convicted. They received a token \$75 fine. Compare this penalty with the \$2,500 handed out in 1993 to herpetologist Matt Hingley who was caught photographing far more common reptiles in the same area without a permit. It was suggested that the court had gone soft on the five men due to the fact that one was an employee at a government-owned zoo.

North Queensland Again:

Bob Buckley in 1998 had his Green Pythons seized again, (refer to *Smuggled-2* for details of his case) John O'Shea of Q/NPWS and his colleagues alleged Buckley's snakes were 'tainted'. They lost that case. The authorities have now charged him with failing to declare the income he made from selling a number of offspring to keepers in South Australia. That case and another alleging his original stock was 'tainted' were ongoing at the time of writing.

In the 'tainted parents' case, Buckley was convicted in the first instance (September 1999) and sentenced to 3 weeks jail (another 15 suspended). He was ordered to pay \$57,700 in fines and costs. He alleged that the case was 'fixed'. He was appealing the matter. That was still undetermined/unheard at the time of writing.

Meanwhile Buckley was found guilty for another serious fauna offence. In one of many raids by officials, they recovered a common Bluetongue (*Tiliqua scincoides*) from his property. It had no paperwork. Buckley was fined.

And Again: The date was 25 May 1998 and the place was Cairns International Airport. Mr. Chee Meng Chong and Sheu Yang Yap were arrested and strip-searched upon arrival from Singapore on a QANTAS flight. The two Singapore nationals were found to have hidden under their clothes ten live Chondropythons, all young ones.

The next day the pair fronted Cairns Magistrate's court and pled guilty to charges of illegal import. One of the men was also charged with an animal cruelty offence. The men were convicted and sentenced to three months jail. The sentence was relatively light considering the alleged offence.

Queensland NPWS officials later alleged that the snakes tested positive for a virus (called an Iridovirus) not previously seen in Australian reptiles. The tests had been carried out at the Animal Health laboratory in

Geelong after two of the ten snakes died. As a result of the disease fear and worries it may spread, all remaining snakes were allegedly destroyed. Wildlife officials claimed that the virus could wipe out all Australian herps if it escaped into the local populations. They then seized on this to justify their attempts to ban any herp imports and exports as well as to impose even tighter keeping restrictions within Australia.

However the same scare mongering had gone on ten years earlier when a seized specimen was found to have had Cryptosporidium. Further studies then revealed that the virus was already present in wild populations. It's just that no one had bothered to look at them before.

The Deal: After being busted Chong then rolled over to authorities and explained why he'd come to Australia. He implicated a reptile trafficker by the name of David McIntosh. That McIntosh had operated with the protection of Queensland wildlife officers was subject to rumour for some years and later confirmed by McIntosh himself.

It was alleged that McIntosh was supplying Chong and others with a veritable wish-list of Australian reptiles. Customs officers allegedly seized a fax from McIntosh's home which was from Chong and listed species sought, including Rough-scaled Pythons (*Morelia carinata*), and Western Swamp tortoises (*Pseudemydura umbrina*). The fax had been sent in advance of the courier's arrival.

McIntosh was charged by Australian customs on 5 September 1998 in relation to his role in the importation of the ten Chondropythons at Cairns. He was set down to face Innisfail court later the same month. He also faced a series of state wildlife charges set down for hearing at the same time.

Earlier McIntosh was refused a reptile demonstrator's permit by the Queensland NPWS licencing officials on the basis of a \$2,500 fine he'd received in NSW in December 1994. DEH Official Mike Chep (refer to *Smuggled-2*) then apparently sidestepped their authority and signed the permit for him, even though such permits weren't usually within his area of authority.

According to McIntosh, he'd even worked for DEH in a formal manner at their Innisfail office. The arrangement between himself and Chep apparently broke down after officers from Townsville got involved following the Cairns airport bust.

More of the same: Notwithstanding the above, it seems that McIntosh managed to do some sort of deal with DEH. While he went down as 'guilty' in court, he was given relatively light penalties for the various offences he was found guilty of. By early 1999 he was back in business. However it didn't seem to be for too long.

In early 1999 he went on a collecting trip across the top third of Australia, collecting such so-called rarities as Woma Pythons (*Aspidites ramsayi*), Centralian Bluetongues (*Tiliqua multifasciata*) and various monitors. Upon his return home he was busted at Atherton. That was on 18 February. McIntosh was caught red-handed with a car full of reptiles, and a glove box full of fuel receipts, motel bills etc, that were later used to prove where he had been.

Word was that the Queensland Fauna Squad had McIntosh under surveillance for the whole trip, and waited for him to get back to Queensland with an accomplice (name deleted) before arresting him. He had 25 reptiles in his possession. At the same time, Queensland wildlife officials did a raid on a house at Beenleigh, just south of Brisbane and seized another six Chondropythons. Whether the busts were connected wasn't known.

Sources: Various.

MORE CHONDROS

On 9 July 1998, Customs officers at Sydney airport intercepted 5 more Chondropythons in two packages that had been sent air freight to a Sydney residential address from the USA. The snakes had been elaborately placed in cloth bags with damp cloths to keep the animals cool and moist, which was in turn placed inside plastic take-away food containers secreted inside the cardboard packages. Those snakes went to Taronga Zoo.

Meanwhile in 1997, 26 Green Pythons were declared during the one month amnesty. Most are thought to have been illegally imported and/or derived from the snakes seized from Buckley in January 1994 (refer to *Smuggled-2* for details).

Sources: Various.

GOING OUT AS WELL

Take a look at a recent American reptile magazine. It's likely that you'll see Ant-hill Pythons (*Antaresia (=Liasis) perthensis*) for sale. Not too long ago, there were none of these outside Australia. None have ever been legally exported from this country. Now there are ever increasing numbers being sold as captive-bred in the USA and Europe. Many are! However the original founder stock clearly wasn't.

Casey Lazik was one who was busted by customs officers trying to export Ant-hill Pythons. That was in 1991. He paid the \$10,000 fine and then went to option B. He now breeds and sells the species in the USA. Others such as Frank Retes of the Goanna Ranch do likewise. That's probably a good thing as I can't see the same thing happening in Australia in the near future. The last two (and only) captive breedings of the species in this country resulted in the snakes being seized by overzealous wildlife officers, thereby terminating any research into and conservation of the species here. Thankfully they are very abundant where they occur, so their long term survival will be in spite of our wildlife

officials and their policies and not because of them.

The most recent raid involving these snakes was probably that of Brad Maryan in WA. No sooner had the ink dried on his paper in *Herpetofauna*, heavily armed officials from CALM were trooping through his house in January 1999 and taking the breeding Ant-hill Pythons. The raid drove yet another wedge between reptile keepers and the authorities in WA.

Sources: Various.

ANOTHER BUST

One man who failed to pay off the right officials was Peter Stoldt. He was busted on 23 January 1996 as he boarded a domestic flight from Perth to Alice Springs. Besides having a pair of Ant-hill Pythons he also had 29 geckos, a Death Adder (*Acanthophis* sp.) and a Stimson's Python. 8 days later he fronted Freemantle Magistrate's court and was fined \$15,500. Stoldt had never had a chance of getting his reptiles out of the country. He'd been allowed to continue unimpeded until he was near to the end of his trip when the authorities moved in to bust him.

Source: *Traffic Bulletin*.

BRITANIA RULES THE WAVES – DOES THE ICZN WAIVE THE RULES?

It's that *gouldii/panoptes* thing again. This time it involves the game of musical types that's been going on. Cogger and Shea published a bizarre proposal in June 1998 to designate a new type (neotype) specimen for *Varanus gouldii* based on a specimen trapped near Perth on 29 September 1997. The specimen was subsequently exported to the UK and lodged in the British Museum of Natural History (where coincidentally the ICZN is based). The two men are asking the ICZN to use its plenary powers to overrule its own rules and make this animal the neotype for *V. gouldii*. However it seems that the ICZN's rules aren't the only ones being violated here. A letter presented by the Deputy Director Wildlife Protection of the CITES Management Group Canberra, Chris Mobbs included a print-out of all legal exports of monitors from Australia in the period 1995 to end 1998. As this (very short) list did not include the animal sent from the WA Museum (exported sometime between 1997 and June 1998) it was concluded that the specimen had been illegally exported. In other words it had been smuggled.

When asked why no one had been prosecuted over the matter, Mobbs said 'It's hard to catch them in the act'.

The person responsible for the export hasn't been formally identified, although two are named by Cogger and Shea in their submission.

With Hal Cogger himself a part of the ICZN it seems that the formal suppression of *Varanus gouldii* as most people know it, along with the suppression of *Varanus flavirufus* is a done deal.

Sources: *Bull. ZN* 55 (2), Chris Mobbs.

MOVE OVER ELVIS

In the last issue of *Monitor* there was the description of a new kind of snake. That was the false King Brown Snake (*Pailsus pailsei*). Since the description was published it seems that these snakes, or things like them have appeared all over the place. We have extremely reliable reports of the same sorts of animal in north-west Western Australia (Fred Rossignoli and Richard Wells, pers. comm.) and Groote Eylandt, NT (Rob Valentic, pers. comm.).

However less reliable reports of these snakes have come from places as diverse as Tasmania, Adelaide and suburban Melbourne. Snake rescue services were deluged with reports of 'False King Brown Snakes' in the suburbs following media reports about the description. It seemed that any Brown coloured snake that looked different to the normal was being branded 'the new species'. For some it became a bit of a status symbol to be able to claim to have seen one. So the next time you are in a 7/11 Store and you see something strange, remember it may not be Elvis, but a *Pailsus pailsei* instead.

Sources: Various.

GOOD NEWS

It's nice to say something positive about the wildlife authorities. It seems that the Queensland wildlife department has followed overwhelming advice and they appear to have been receptive to early enquiries for research permits to collect further specimens of *Pailsus pailsei* for research purposes. In the longer term this could mean sustainable populations in captivity as a further safeguard for the species.

MORE GOOD NEWS

Snakes everywhere. Now that's what most readers like to hear. The 1998-9 breeding season was probably the best yet for Australian herpetoculture. Among the species bred in numbers were the elapids, Death Adders (various forms), Collett's, Tiger, and Red-bellied Black Snakes, as well as the following kinds of python, Diamond, Bredl's, Queensland Carpet, Children's, Stimson's, Spotted's, Black-headed and Womas. Then there were successes with dragons, skinks, monitors, geckos, freshwater tortoises (should I call them turtles?) and frogs. For those that don't have these animals this is also good news. In theory it means that as pent-up demand is satisfied real prices for specimens should hopefully drop.

FURTHER HERP NEWS

The following stories are sourced primarily from Wes & Kim von Papineou, of K & W Herp Haven. E-mail: herphaven@sprint.ca

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NO MORE NETTING IN LAKEFIELD NATIONAL PARK

While private herpetologists are fined heavily for capturing and keeping reptiles, there are other

Australians who can go out into the wild and kill heaps of marine reptiles without fear of being fined. They are the fishermen on our northern coastline who kill thousands of reptiles annually. This carnage even goes on in waters offshore from our national parks.

However a good sign came from Queensland recently when the Queensland government announced the immediate cessation of commercial net fishing operations in Lakefield National Park.

State Environment and Natural Resources Minister Rod Welford said he was no longer prepared to allow more deaths of protected species, such as crocodiles and turtles, at the hands of some uncontrolled commercial fishers.

The decision comes after a *Courier-Mail* report on Monday which revealed the government had turned a blind eye to the netting operations, which breach the State Nature Conservation Act.

Mr Welford said the commercial fishermen had been allowed to operate in one of far north Queensland's most fragile ecosystems for far too long. "What might have been accepted practice in the past is not acceptable now and I have been appalled at the reports of the apparent plunder of our protected wildlife," he said.

Source: Wes & Kim von Papineou

RAIDS AND BUSTS

300 snakes seized in Golok: Three hundred highly poisonous snakes, which are traditionally consumed for health reasons, were seized at the Thai border town of Golok on a Monday night.

General Operations Force (PGA) Ninth Battalion commanding officer Supt Salleh Mat Rasid said a 33-year-old man, a local, was arrested for trying to smuggle in the snakes.

He said the snakes, most of which were '*ular sendok*' and cobras, were to be taken to Tanah Merah for distribution to restaurants for their blood and flesh.

Supt Salleh believed that the reptiles were worth at least RM6,000.

He said this was the first case of snake smuggling activity at the Kelantan-Thai border since 1995.

Source: *The Star* (Petaling Jaya, Malaysia) 31 March 99

CLOSE WATCH ON SNAKE SMUGGLERS

Kangar: A syndicate with international connections is believed to be smuggling thousands of snakes into the country through Perlis and other states bordering Thailand.

State Wildlife Protection and National Parks Department director Zulkifli Arshad said the racket's operation was being closely monitored.

"We know that a big syndicate with links in other countries is involved in the smuggling of protected species. Despite stringent enforcement, the syndicate

is trying to find ways to smuggle in the reptiles," he said.

He said that racket members had changed tactics by diverting activities to other border states after the department seized more than 1,000 snakes in Perlis on three different occasions in Jan-Feb 1999.

Three men were caught smuggling more than 1,000 cobras at the Kuala Perlis jetty and at Jalan Kaki Bukit, near the Malaysian-Thai border town of Padang Besar, on Jan 22 and Feb 1, 1999 respectively.

Two of them, a Singaporean and a businessman from Perlis, were each fined RM4,000 by a magistrate's court on Jan 23 for smuggling in 555 snakes, mainly cobras.

Zulkifli said it was learnt that the snake's bile, blood and meat fetched attractive prices locally and abroad, adding that they were believed to be exported to Taiwan and Singapore.

He said that import or export of any protected species was only allowed with a permit from the Convention on Trade of Endangered Species of Flora and Fauna.

Source: *The Star* (Petaling Jaya, Malaysia) 4 April 99

TWO INDICTED FOR IMPORTING LIZARDS

Miami, Florida: Two men are charged with illegally importing lizards into the US. Howard Moss and Robert Kelton have been indicted for bringing more than eleven thousand Haitian curly-tailed lizards into Florida in 1995 and 1996.

Haiti bans the export of such reptiles, but the pair was able to get around the ban by using fraudulent documents claiming the lizards were from elsewhere in the Caribbean. They face a maximum of 14 years in prison and nearly two million dollars in fines.

Source: States News Service (USA), 2 April 99.

MALAYSIAN MAN FOUND GUILTY OF TORTURING AND SMUGGLING SNAKES

A Malaysian man was sentenced in April 1999 to a week in jail for smuggling and torturing a load of 2,546 'endangered' snakes that he tried to slip through a border crossing from Thailand.

Gek Seg Kaliappan pleaded guilty in a Malaysian court to having stuffed the reptiles in nylon sacks and plastic baskets to get past customs officers a week earlier in northern Malaysia, the national Bernama news agency reported.

Officials from a special anti-smuggling unit uncovered 105 Asiatic Cobras and 2,441 Oriental Rat snakes, both of which are protected species under Malaysia's Wildlife Protection Act.

Most of the snakes would have ended up in soup bowls in Chinese restaurants or on dinner plates in many Asian cities, where snake meat can sell for around US\$6 a pound (US\$15 a kilo). Some people also drink snake blood, believing it can cure ailments ranging from backaches to impotency.

Gek, who was tried in a Perlis (Malaysia) state court,

was also sentenced to pay a \$2,900 fine.

Sources: Various, including the *Canadian Press* and *The Record*, 19 April 99.

CRUTCHFIELD IN STRIFE WITH AUTHORITIES AGAIN

The former owner of Tom Crutchfield's Reptile Enterprises was sentenced to 30 months in prison for conspiring to smuggle rare and protected snakes from Madagascar into the United States, the U.S. Justice Department said Friday.

Tommy Edward Crutchfield, 49, formerly of Bushnell, Florida, pleaded guilty in January to the conspiracy count, as well as to three counts of smuggling and three violations of the Lacey Act, a federal wildlife statute.

A federal judge sentenced Crutchfield to 3 years supervised release.

The former owner and president of the Lake Panasoffkee business, could have been sentenced to a maximum of five years in prison and a fine of \$250,000 on each count.

Crutchfield admitted to conspiring with two German nationals, Wolfgang Michael Kloe and Frank H. Lehmeyer, to bring more than 200 reptiles into the United States in 1995 and 1996. The animals included Madagascar Tree Boas and some Madagascar Ground Boas from Germany, which are protected by international treaty. Crutchfield previously had been imprisoned for smuggling endangered Fiji Island iguanas into the United States in 1995. He was on supervised release when he was arrested. In that case Crutchfield said he pled guilty to save going through a second lengthy trial. He beat the charges the first time around at appeal, because of prosecution misconduct (refer to *Smuggled* and *Smuggled-2* for details).

Crutchfield was considered one of the largest reptile importers in the United States before he went to Belize in 1997, allegedly after the Justice Department notified him he was under investigation. He was expelled from Belize in August and arrested by federal officials in Miami.

Source: *Tampa Tribune* (Florida) 16 April 99

A NIGHT ON THE HOPS WOVES DOGS

Queenslanders are coming to grips with a growing new recreational drug crisis - among their dogs.

From Coolangatta to Townsville, people are seeing their pets sneak out and get high on the poison of Cane Toads (*Bufo marinus*).

The Raymant family, of the Gold Coast, became aware of a problem when their spaniel, Emma, started returning home frothing at the mouth, shaking her head, wandering aimlessly and not eating.

Mr Trevor Raymant discovered what was going on after following Emma. She had found a Cane Toad and 'mouthed' it, holding it in her jaws briefly, but not killing it, and then dropping it.

Having apparently learned that poison in the glands behind the toad's head has hallucinatory properties, Emma deliberately antagonised the animal, causing it to discharge enough poison to make her high.

Emma is not alone. According to Dr Dianne Barton, a lecturer in zoology at James Cook University, most young dogs learn that toads are dangerous and should be left alone, but some have learned to associate them with a pleasant experience.

Source: *Age*, 5 April 99

THE FROGS

Parasite blamed for deformed frogs: A survey of 35 ponds south and east of San Jose has demonstrated for the first time that a parasite is responsible for at least some of the deformities seen in frogs across North America.

Pieter T.J. Johnson, an undergraduate at Stanford University, spent two years tramping through ranches and county parks in the tree-studded, grassy hills, looking for amphibians with extra, missing or twisted legs.

Most of the animals he found were fine. But in four ponds, he discovered large numbers of Pacific Tree Frogs — whose loud, high trilling is the most common froggy voice in the region — that were malformed.

Back at the laboratory, Johnson and two friends did a series of experiments that showed the deformities were caused by a tiny parasitic flatworm that spends part of its life cycle in the reproductive tract of snails. The worm swims out of the snail, burrows into a tadpole and forms a cyst. When this happens at exactly the right time, just before the tadpole metamorphoses into a frog, it can disrupt the growth of the hind legs, the team reports today in the journal *Science*.

"I find it's a terrific experiment, a really fascinating, interesting result," said David Gardiner, a developmental biologist at the University of California-Irvine. "It already has stimulated a lot of follow-up work. It's caused a lot of people to have an interest in parasites that wasn't there before."

However, he and other amphibian researchers cautioned that the study may explain only a small percentage of the frog deformities that have been found over the past five years. It might, in fact, apply only to the West Coast, or only to Santa Clara County.

Nor do the parasites appear to be related to the separate, worldwide problem of declining amphibian populations, biologists said.

This particular parasite, known by the scientific name of *Ribeiroia*, has not been found in amphibians in Minnesota, where a group of school children on a field trip discovered the first batch of deformed frogs in 1995, said Judy Helgen, a researcher with the Minnesota Pollution Control Agency.

While Minnesota frogs do harbour a related parasite, she said, it's found in both normal and malformed animals.

'The lack of association makes us feel something else is causing the malformations,' she said. Researchers there are pursuing a number of possible causes, including chemical contamination and the thinning ozone layer, which has been letting in increased levels of harmful ultraviolet light.

The parasite does not seem to be responsible for the decline or disappearance of frog populations in California, including pristine areas of Yosemite National Park and the Sierra Nevada. This decline is part of an alarming worldwide drop in amphibian numbers over the past 15 years — a sign, many fear, of an underlying environmental catastrophe.

Gary Fellers, a biologist with the U.S. Geological Survey who has been surveying Californian amphibians for the past eight years, said fewer than one in 1,000 have been deformed — about the level that biologists would expect to see in a healthy population.

"That's pretty rare," Fellers said, "certainly rare enough that deformities are not playing a role in the declines that we are seeing." He said his surveys lead him to think the cause of the decline may be pollutants blowing into the mountains from the Central Valley.

Over the past five years, the North American Reporting Centre for Amphibian Malformations, in North Dakota, has collected nearly 1,600 reports from biologists who have looked for problems among frogs, toads and salamanders. So far they have found roughly 4,400 malformed animals among 62,000 normal ones, said Jeff Jundt, a biologist who compiles the centre's data.

"From what I know, the only ones really affected by these parasites are in the Pacific Northwest," he said.

In addition to Minnesota, hot spots of deformity have been reported in Wisconsin, Michigan, Vermont, New York, Ontario, the Pacific Northwest and Northern California. Over the past 10 years, deformities have been found in 36 species of amphibians in 42 states.

Many reports are from areas near farms or ranches, leading scientists to suspect that weed-killers, pesticides, fertilizers or other chemical contaminants could be involved.

At this point, some researchers think that different things may be going on in different places, said UC biologist Gardiner. 'There are a lot of ideas,' he said. 'What we need is more data.'

'The idea that parasites could be involved in amphibian malformation surfaced in the late 1980s. But until Johnson's study, there was no experimental evidence to support it,' Gardiner said.

Johnson, who graduated from Stanford last June, did the study as part of an honours thesis. He recruited two friends to help out — Kevin B. Lunde, who had just graduated from UC-San Diego, and Euan G. Ritchie, a student at James Cook University of North Queensland, in Australia. Johnson had already examined over 10,000 frogs in the field, more than 1,000 of which were deformed. The team members spent long nights in the

laboratory, waiting for flatworms to emerge from their snail hosts between midnight and 4 a.m. They took tadpoles from the Eel River, where no abnormal frogs had been found, and exposed them to various numbers of worms. Eighty-five percent of the infested tadpoles that survived to become frogs had severely abnormal limb development, they reported.

Johnson speculated that these deformities could be in the parasite's best interest, part of its evolutionary strategy. A bird might be more likely to catch and eat a malformed, non-ambulatory frog, and then to spread the cysts to another pond where they could start another cycle of infestation.

He's now working as a research associate at Claremont McKenna College, trying to drum up grants to continue his work on frogs, including a planned survey of six states this summer.

Source: *San Jose Mercury News* (California) 30 April 99

FROG DECLINE LINKED TO CLIMATE SHIFT

An abrupt, unprecedented climate shift apparently associated with global warming appears to have caused the mysterious disappearance of 20 frog species in Costa Rica, researchers reported yesterday.

The frog declines, which included the infamous extinction of the Golden Toad, coincided with a sudden reduction in moisture levels on the continental divide atop Monteverde in Costa Rica's central highlands, according to J. Alan Pounds, of the University of Miami, and his colleagues.

The discovery is evidence that global warming is effecting wildlife in previously unrecognized ways, he said. 'Biological communities are responding to climate change more quickly than we thought,' he said. 'We've observed a pattern here and our responsibility is to sound an alarm.'

Monteverde was settled in the 1950s by Quakers from the United States who set aside a large area of 'cloud forest' as a nature preserve. Moisture-laden winds off the Caribbean cool as they rise up the eastern slope, forming a cloud bank on the mountaintop and shrouding the jungle in mist.

The cloud forest is home to an enormous diversity of plants and animals dependent on its extreme moisture levels. Conversely, other species adapted to drier, warmer conditions, live further down the mountainside, below the base of the cloud.

Pounds and his collaborators, Michael P.L. Fogden and John H. Campbell, discovered that amphibians and reptiles living at upper elevations had simultaneously suffered severe population reductions. At the same time, a number of bird species from lower sections of the mountain began an upward migration. Toucans, previously found only in the lowlands, now live side by side with the Resplendent Quetzal, the colourful, long-tailed bird identified with the cloud forest going back to pre-Columbian times.

All of these changes coincided with unusually warm, dry conditions produced by a combination of the El Nino weather pattern and a more general, long-term rise in sea surface temperatures, the researchers found. These effects, Pounds said, are amplified at higher altitudes and have caused the base of the cloud bank to lift. As the cloud recedes up the mountain, the misting and condensation essential to life have decreased.

When the scientists examined stream flow and ocean temperature data, plus daily records of air temperature and mist frequency near the continental divide, they discovered not only that the dry season had become warmer and drier, but that dry days now come in longer sustained runs.

The overall climate trend corresponds to a shift in bird demographics that has brought 15 new species up from lower elevations. Meanwhile, two lizards found only at higher elevations began to decline in the late 1980s and had vanished by 1996. In the same period, a third species of the small lizard that thrives in drier conditions remained stable. All of this took place against the backdrop of a massive frog population decline that began in 1987 and has since wiped out 40 percent of species present in a series of synchronous crashes that have occurred during peaks of warm and dry conditions.

Unlike birds, earthbound amphibians have limited upward mobility. The Golden Toad, which lived only in several wetlands in a small area almost at the mountaintop, had nowhere to go. It was last seen in 1989.

Global warming probably was not the immediate cause of the Golden Toad's demise, Pounds said. More likely the climate fluctuation weakened the animals and made them vulnerable to an epidemic involving a pathogen or parasite, such as the chytrid fungus implicated last year in other frog die-offs around the world. But Pounds said no one will ever know the exact cause.

"At the time of the crash we weren't aware of what was happening," Pounds said. "Nobody looked at the animals to see what killed them." Pounds's research, published in today's issue of the journal *Nature*, appears to confirm the warnings of many scientists that amphibians are reacting to widespread environmental degradation in even seemingly pristine habitats.

"This is very important," said Andrew Blaustein, a biologist at Oregon State University. "It's a convincing scenario for why the Golden Toad and other species went down the tubes. It also shows how incredibly complex these environmental interactions can be."

Michael Lannoo, U.S. coordinator of the Declining Amphibian Populations Task Force, said Pounds has demonstrated the first animal extinction attributable to modern climate change. "People who say global warming won't be a problem argue that animals will simply shift to more suitable habitats as change occurs," he said. "Alan's results show there are limits to that."

Source: *Washington Post*, 15 April 99

TAXONOMER AUSTRALIS ON ENDANGERED LIST

A critical lack of a basic scientific skill was potentially endangering the survival of newly discovered species, a senior researcher said.

According to a report in *The Australian*, in early 1999, many Australian scientists did not have the skill of taxonomy, or describing species, and this had allowed an 'absolutely fantastically huge' backlog of newly discovered species to need classification. At least that was the view of Buzz Wilson, a zoologist and a principal research scientist at the Australian Museum.

Taxonomy involves discovering, describing and naming new species with a two-word Latin name. The first name always appears with a capital and denotes the genus, or group of species the creature comes from, while the second name in lower case, is the species name.

According to Dr. Wilson taxonomy has a reputation of being 'difficult, boring and not cutting edge' and was currently not taught as a stand-alone degree in any Australian university.

Watson said 'How can you prevent something going extinct, how can you prevent damage to a species, if you don't know the species is even there'.

He went on to say, 'Our legislation won't allow us to protect a species until it's described.', although that quote doesn't accurately reflect the laws in most states that currently have 'blanket' protection.

Only five percent of Wilson's speciality, marine isopod crustaceans, have been formally described.

Until now basic information about Australia's biodiversity is not being generated by scientists at universities, as none offers a taxonomy degree, and teaching the skill has been relatively ad hoc at museums.

Watson said, 'It doesn't seem like cutting-edge science, we use Latin names, microscopes, we make pencil drawings that we put in publications so that other people can identify these things. It's not sexy like molecular biology,' Dr Wilson said.

In May 1999 the University of New England will sign an agreement with the Australian Museum and the Royal Botanic Gardens for a new course which will teach taxonomy and evolutionary biology. This appears to be a first in this area for an Australian tertiary institution.

MORE EXTINCTIONS ON THE WAY?

The Director of the Australian Museum, Dr. Michael Archer was quoted in April 1999 making the following remarks on Australia's environment and conservation in this country.

Archer, who likens Australia's national parks to 'environmental leper colonies' and 'land of the living dead', believes his vision for the future is 'based on good science, rational economics, common sense and hard facts of Australia's land degradation record'.

The picture of the Australian landscape is clearly on view. It is comprised of 'sick and dying rivers, graveyards of trees succumbing to dieback, mounting losses of soil to

wind and water erosion, insidious upwellings of salty groundwater that are set to ruin more than 15 million hectares of farmland, \$10 billion worth of coastal development under corrosive threat from disturbed acid sulfate soils and the declining fortunes of many farms and rural towns'.

Despite the encouraging success of Landcare, the sheer size of the task of reversing the damage is beyond the capacity of rural Australians alone. The one million trees program despite being a good psychological program, falls way short of the numbers required because we are still 'facing a net loss of trees over what we have planted'. Estimates of 30 billion trees are required throughout Australia - far more than any program has targeted so far.

Australia's 5,500 national parks and reserves, because of their small sizes, put 'fairly predictable use-by dates on many animal species'. They are effectively islands surrounded by alienated lands. The effect on the extinction rates on animals is clearly demonstrated by what has happened on real islands such as New Caledonia (18,650 sq km) and New Zealand's 2 large islands (115,00 sq km). Archer believes reserves need to be about 300,000 sq km to be effective and there needs to be one for each major habitat type. This means Australians have to change the whole way they live and use the natural resources sustainably rather than rely dominantly on introduced animals and crops.

Sources: Peter Mirtschin and *The Bulletin*, 27 April 1999.

TURTLES IN THE SOUP

One of the world's great centres of turtle and tortoise diversity, Southeast Asia has long teemed with species found nowhere else in the world. But in recent years, researchers say, this biological treasure trove has become a gold mine for profiteers who have been gathering every turtle in sight for sale as food and medicinals in the turtle markets of China. Biologists say collectors have made such a clean sweep of turtles in countries like Vietnam and Laos that it can be impossible to find a single turtle even in ideal habitats in national parks and remote preserves. In the regions of Southeast Asia where turtles do persist, biologists say, they are fast disappearing to satisfy the huge, some say infinite, demand for turtles in China. Scientists have been reduced to looking for turtles in China's markets as they say an entire fauna is being bought, sold and eaten into oblivion.

'Southeast Asia is being vacuumed of its turtles for China's food markets,' said Dr. John Behler, chairman of the freshwater tortoise and turtle specialist group at the International Union for the Conservation of Nature and Natural Resources. 'The China markets are a black hole for turtles.'

Dr. Behler, who is also a curator at the Wildlife Conservation Society, said even endangered species whose trade was forbidden by the Convention on International Trade in Endangered Species, were showing up in China's markets headed for the soup pot and the frying pan.

Source: Carol Kaesul Yoon, *New York Times*, 4 May 1999.