

Issues in Amateur Herpetology

Why?

Why do amateurs keep reptiles or amphibians? Most do so for a combination of reasons. The first is usually a simple fascination with this type of animal. Many novices, especially children, see their first lizard as a pet. If the Internet newsgroups are any indication this attitude may persist into adulthood for many people - Americans anyway, who like to let their pet "igs" roam the apartment. Pet keepers tend to keep small numbers of animals so the level of individual care is likely to be high, but life as a pet can be stressful for the animal if it is handled frequently. In addition, time out of the cage increases the likelihood of an accident. I remember a teacher who liked to walk around his classroom with his pet gecko on his shoulder. The poor man was so distraught when the inevitable happened; it fell off and one of the kids trod on it. Pet keepers also, in my experience, are more likely to be guilty of anthropomorphism. I remember the American who wrote to a newsgroup that he knew his iguana "liked him" because it always bobbed its head when he appeared. I read somewhere that iguanas bob their heads in response to a perceived threat. One regularly sees comments in Moko about newly caged lizards "wanting" to escape. Escape is really quite an advanced concept when you think about it. I think the animal simply cannot grasp the concept of a transparent solid. Eventually the animal learns its boundaries and the behaviour stops.

Collectors

Once hooked into amateur herpetology, the hobby expands. Most of us to some degree become collectors, doing the rounds, seeing who has what, and can I have some, please? Cage building begins in earnest and soon a small town appears in the backyard. Taken to extremes, "collecting" can have negative aspects. The amount of care per animal declines and an animal in poor health is easily missed until seriously ill or dead. And how do you take an extended holiday? Of course the enjoyment of working with and displaying one's collection more than makes up for the effort required maintaining it.

Overeager collectors can make themselves unpopular with the breeders that are on the receiving end of efforts to persuade them to part with stock. One or two collectors that I have heard about have resorted to stealing from wild populations, although they do so at risk, for most amateurs I have talked to are fully prepared to do in anyone indulging in this sort of collecting.

Overseas collectors, coveting our native *Naultinus* species, are putting up considerable sums of money to encourage both theft from private collections in New Zealand, and poaching from wild populations. A price of \$US6000 is a commonly touted figure for a pair of *N. greyi*, with \$US9000, being quoted on the net for a single South Island *Naultinus*. With almost all serious collections being housed in outdoor cages, amateur herpetologists have good reason to be concerned for the safety of their collections. I guess the only way pressure is likely to come off is if overseas breeders can eventually produce sufficient numbers for the price to come down. How long until this comes to pass I cannot guess, but with the low birth-rates of our species, I suspect NZ herpers will need to have increased security measures for some years to come. How do you provide security for outdoor enclosures? Will we be forced to

move collections indoors and artificially reproduce the very conditions that exist on the other side of the locked door?

Breeders

It's a very short jump from collector to breeder. Again there can be a multiplicity of reasons why one might want to breed lizards or frogs; a simple desire to have more animals, insurance against the death of older ones, the enjoyment of being able to give lizards to others, the challenge of being able to breed the more difficult species, or even the prestige which comes with being a breeder of the rarer species.

Two other reasons are more debatable. Are we aiding conservation? Does breeding prove that our animals are healthy and "content" – if I can indulge in a little anthropomorphism? Perhaps I should say "unstressed".

In terms of conservation the current captive populations are probably of little value. Breeders have to consider three questions about their breeding colonies; do all the animals come from the same contiguous population? Is it possible that any of the animals could have hybrid ancestry? How inbred is the collection? A fourth question might be: can I convince DOC that my animals have genetic integrity, and are sufficiently free of disease to warrant release back into the wild. DOC is only using locally captured geckos for release onto Mana and Matiu/Somes Islands. Local herpers are only being used to hold and breed such animals until there are sufficient numbers for a release to be successful.

It would also be interesting to compare the lizards of wild populations with a sample from the captive population. I know I am guilty of subjective selection and I am sure I am not the only breeder guilty of selecting the biggest and brightest. Yellow mutants are highly sought after. I know of others who have deliberately bred for a lack of colour in *Hoplodactylus* species. I once tried to breed from a "yellow" (green deficient) *N. elegans* and a "blue" (yellow deficient), to see if I could get a blue and yellow deficient offspring. It would have taken at least two generations but the "blue" died before I had made any progress. Captive populations almost certainly have a more limited gene pool than wild populations but I suspect there could be more extreme variations in the captive population due to selective breeding occurring in place of natural selection. The jewel gecko (*N. gemmeus*) in particular is a very variable species.

Of course the knowledge of husbandry gained by amateur breeders is important, and those assisting in the release schemes around Wellington are using that expertise. In addition, having a healthy captive collection allows potential herpers to get stock without the temptation to poach from the wild. I do think, however, that we need to work to improve the genetic diversity of the captive populations, in order to ensure they remain viable for future generations of herpers. Even though I have been teaching for years about genetic drift and the dangers of breeding from a small pool of animals I was somewhat shocked when I ran an analysis of some of my own breeding colonies. I had succumbed too often to the desire to keep the largest and prettiest animals for myself, with the result that as old animals had died I had lost several genetic lines, greatly reducing the gene pools of my colonies. This is not always avoidable, especially when males are lost and only their offspring are available as

replacements, as with my colony of Sandy Bay *stellatus*. I am now getting a number of runts, presumably due to inbreeding, and desperately need to find an unrelated male, but suspect most of the populations out there come from the same founding population. How many herpers, I wonder, know the precise origins of their stock?

Does successful breeding indicate health and contentment? I would like to think so, but have a few doubts. Many plants are encouraged to flower prolifically by torturing them – restrict root growth, prune back hard, bind the stems, limit water. Fortunately I do not think this applies to animals, but I have had the occasional animal produce young when all has clearly not been well. I am thinking in particular of a gaunt old female Auckland green gecko. She never gains weight and her pelvic bones at the best of times raise quite prominent bumps. Last year, for the first time in 10 years, she became gravid and produced twins, but the cost to her was very high in terms of body condition and it is a small wonder that she even survived. While her offspring represent a welcome increase to the genetic diversity of the colony, I will not to put her in a breeding cage again. In cages the females cannot run away from the males.

Management

Since 1984 I have been recording on a database as many details as possible about my lizards. In particular, as Captive Breeding Co-ordinator (CMC) for the Otago skinks, I maintain a database of all captive populations of Otago, scree, and grand skinks. Out of practicality this is now in the form of a Microsoft Access database. The SPARKES database on which the original records were kept is unfortunately not available to me. I understand this program is designed to sort out ideal pairings for the genetic maintenance and improvement of captive populations, and this is an area where some assistance would be welcome.

The Otago Skink Captive Management plan, or CMP (not yet published), calls for participants of the breeding scheme to transfer stock when requested from the CMC so that the genomes of individual skinks can be kept as diverse as possible. What I would like to see is for volunteers (amateurs or institutional) to coordinate similar breeder's groups for as many species as possible. As recruitment from wild populations to captive populations is extremely low, I see this as necessary to the continued viability of the captive populations. It would be very helpful in some cases if additional wild stock could be added to improve genetic diversity but DOC personnel, are not generally receptive to requests to collect from the wild, usually with good reason. This situation could be improved if we are seen to be serious about managing our populations along strict guidelines.

For any management plan to work, it is vital that individual animals can be identified. This is a major source of frustration to me as CMC for the Otago skinks, as many of the newer holders are now unable to identify their animals by stud number. This really defeats the exercise of recording birth details. Finding the ideal method for identification that is practical and reliable is not easy. Most amateurs hate the idea of toe clipping, and as captive animals do often lose toes it is not particularly reliable. Also toe clips can be falsified. I have taken to photographing all my lizards dorsally. This provides a good record for identity, although it can be time consuming to identify one individual out of several. The dorsal patterns of Otago skinks, for

example, are quite complex and I am now looking at using a flatbed scanner to give ventral scans, which are simpler, but (so far) seem to be unique to each animal.

Education

Anyone who keeps herps inevitably becomes an educator. Native lizards today have a much higher profile than they did 20 years ago, but unfortunately the general public still seems to know little about these animals. There is the “ooh” factor that keeps some away, many expect them to be slimy, and people frequently ask me what country my lizards come from. One of the most rewarding aspects of introducing people to my lizards is the rapid change from repugnance, or indifference, to delighted enthusiasm. We educate visitors to our homes, visit to schools, and talk to local interest groups. The only form of education I am wary of is through articles in the local newspaper. Too many herpers have suffered theft after having articles about them published.

What about educating DOC? I must say that I have consistently found the DOC staff I have had to deal with to be friendly and helpful. There are some issues, although I suspect most relate to workload issues within the department. Staff turnover is high, at least in relation to the positions that officers hold, which can be frustrating when dealing with long-term issues. It can take a long time to get transfer permits, losing windows of breeding opportunities. Different conservancies have different interpretations of policy. For example the Wellington Conservancy has a very strict interpretation of policy. Permits are generally given only for specific species, while other conservancies allow the permit holder to obtain lizards of any species within the A, B, or C category of the permit. And I won't name the conservancy where a fellow herper was told “you've got your permit so I guess you can go out and catch some lizards now.”

Overall it is up to us to keep talking to local DOC officers. The NZHS has a long tradition of inviting DOC officers to address society meetings and discuss local issues. Keeping up a dialogue is the best way to ensure that DOC understands that we are serious about both our lizard collections and the conservation of wild populations.

On rare occasions there can be misunderstanding of motives on both sides – eg a particular DOC officer “is philosophically opposed to keeping anything in captivity and is using his/her influence to make things difficult for us” or “these amateur collectors will do anything to get the specimens they want”.

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Research

We are also all researchers, trying to refine our techniques to improve breeding rates and the health of our charges. Through the NZ Herpetological Society publication

“Moko” the fruits of our research can be passed on to others. What other ways are there of being involved in research?

One way is to become a volunteer helper for DOC staff on fieldwork. This is also a good opportunity to compare your captive animals with those in the wild. Are the wild ones fatter? Or more lean? How do colours and the condition of the skin compare? You may go home with some new ideas about housing or diet to put in place. And you have had a neat holiday to boot!

I regularly receive requests for assistance from undergrad or postgrad students. Many of the requests are simply impractical – eg “can I borrow 20 adult *N. gemmeus* for one year”. Others are more reasonable – assistance to get scats or skins for example. A Massey student wanted to try and train a dog to find geckos – I’m not sure how she got on in the end as I stopped hearing from her. Many requests are for information and most of these I have tried to circulate, but I gather there has not been much of a response. A request from Tony Whittaker on behalf of an American colleague for information on birth weights and snout-vent (sv) lengths drew a blank. Apparently I am the only person contacted that had any data. The collection of data is an area where amateur herpetologists could provide research information. Not everybody can weigh lizards to one decimal place, but most could regularly record growth data by measuring the sv length. In addition keeping a record of the dates animals are seen mating, birthing, or other behavioural observations, accompanied with weather data and times of day could well prove useful some time in the future. Had a bad year for gecko births? What were the mean monthly temperatures for the critical months, or sunshine hours, or number of frosts for your region? How do the temperatures inside your cages compare with outside?

The Otago skink CMP covers the use of captive skinks for research at Dunedin University. Those participating in the management plan may be asked to provide at least 20 skinks of uniform age and size. This strict criterion will make for a very interesting challenge. If this proves successful, similar schemes could be run for other species. One critical issue for amateurs is whether they would be willing to supply lizards for experiments that will be destructive to the animals.

Profit

Can we turn our hobby to a profit? Alas, probably not. By law, native lizards and frogs have no commercial value. Australians can sell their lizards to each other, but not us. The rationale for this is that putting a price on native fauna would encourage poaching. The current overseas demand has certainly proved this to be true. Some heretics are suggesting that we should be allowed to farm native lizards and export them, with the idea that satisfying demand might take some of the pressure off. I am sympathetic to this idea in principle, but think the timing is wrong. Prices are just so high at the moment that poaching would almost certainly increase if there was a legal trade to act as cover for illicit activities.

One could paint, photograph, carve, lizards for a small profit, perhaps feeding into the tourist trade. One could flog educational CD’s at conferences in the guise of giving a talk. We could turn our collections into public displays – but this requires a licence and meeting stricter DOC requirements than most of us could reasonably provide

There is one way that money can and is being made – breeding exotics. Fire-bellied salamanders, red-eared terrapins, leopard geckos, blue tongue skinks, bearded lizards. They are all in the country and command high prices. Some of the original stock has

passed into private hands through zoos, but all of them? There are plenty of rumours concerning the illegal entry of exotics to New Zealand. I understand that legally you can only be convicted if caught in the act of smuggling. Once they are in you are home free. But what risks do smuggled exotics pose to New Zealand's biosecurity?

And what about snakes! We seem to be a rabidly snake-phobic country. Not now, not even for zoos, not ever, keep New Zealand snake free, our clean green image will be destroyed forever – am I raving? Time to stop perhaps.

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