Imping:
Repairing a Bird’s Damaged or Clipped Wings
By Greg Glendell

This note describes the process of imping, it is not suggested you do this yourself to a bird, unless you have learnt how to do it from someone who is already familiar with the technique.

Imping is the process of re-attaching donor feathers onto a bird’s wings by the use of small splints inserted into the hollow shaft of the bird’s main flight feathers (primaries and secondaries). It restores flight immediately and is also invaluable in preventing broken blood feathers during a clipped bird’s moulting period. Imped feathers will of course also be moulted out and replaced eventually, as though they were the bird’s normal feathers.

In most cases, imping is carried out by a specialist avian vet. The bird is usually anaesthetised, though very tame birds who like being ‘cuddled’ do not need to be anaesthetised. Donor feathers, preferably of the same species, will be needed to match up with those your bird requires. No two flight feathers on a bird are the same; and each has its ‘mirror image’ feather on the opposite wing. Donor feathers should be sterilised, without causing them to be damaged. Imping does not directly affect any live tissue. Imping is a skilled task but not difficult to perform. It requires the feathers to be attached accurately as regards their angle of insertion and length. The aim is to have your bird’s wing returned to its natural condition.
whenever possible. Most parrots have 22 flight feathers on each wing (12 secondaries and 10 primaries) though many birds can still fly with just 6 or 7 primaries attached.

First, the donor feathers should be laid out in the correct order of attachment. This is determined by close examination of each feather. There are differences in the width of leading edge/trailing edge. The more distal feathers have a narrower leading edge, and have bigger notches and margins (except the two MOST distal primaries which are usually also flatter and shorter in most birds. Lengths of bamboo splints of appropriate size are then prepared for the species. Af. Greys and Amazons need splints about 1 inch long, macaws need splints about 1-and-a-half inches long. Splints need to be thick enough to be a snug fit in inside the hollow feather shaft (they will be inserted one, to one-and-a half inches from the base of the feather). The bamboo splints should be whittled down until they fit just right. Half of the length of the splint is put into the hollow section of the donor feather shaft, and the other half into the receiving feather shaft (clipped feather) of the bird. Note; all birds’ flight feathers are embedded in their wing bones, so it is important to be very careful to make sure you do not damage your bird's feather stumps by having the splint too long.

To reduce the time the bird is anaesthetised you can prepare and glue the splint into the donor feathers before imping onto the bird. The best glue to use is quick setting epoxy resin, trade name here in the UK is ‘Araldite’. This sets in about 10 minutes. ‘Superglue’ sets too quickly. Take care not to get any glue anywhere else. Shield neighbouring feathers with some inert plastic film as you imp on. Work from innermost wing feathers to most distal ones as you imp. In replacing the feathers, follow the natural line, form and feather length of the species you are imping. If the species is new to you, take photos of another fully flighted bird's extended wings of the same species to check on how they should look and use this as your guide.

When imping is done properly and skilfully, the imped feathers should lie in the natural position when the bird is at rest, as though they were the bird’s own feathers. It is then very difficult to actually see which are the bird’s own feathers, and which are imped ones. In flight, they should be as good as the bird’s own feathers and perform just as well. If you achieve this, the bird will be able to fly normally when it makes its first few attempts at flight. Imping ensures the bird will replace and moult normally, without breaking blood feathers and this is the real advantage to imping for the bird. Also, by ensuring the bird has good full-length feathers next to any ‘blood’ feathers, the protection to these blood feathers is ensured during their delicate growth stage.

In most parrots the normal rate of feather growth when the bird is moulting is 3 to 4 mm per day, so it takes a grey parrot about 40 days to re-grow a primary feather (which is about 16cms long), but with smaller birds primaries a can be replaced in half this time. If a bird’s flight feathers are examined in very good light, you can just about see these growth bars, each is about 3 to 4mm wide. Imping can also prevent feather plucking and self mutilation, especially in African greys and cockatoos.

Once imped, allow the bird time to get used to its new wings. The bird will not know that it can fly by just looking at its new feathers. But once it takes to the wing, it will then realise it can fly. The bird may find it strange to be suddenly flighted at first, but most adapt within a few minutes to having two ‘normal’ wings. Make sure the bird can ‘air-brake’ safely (fly at near stall speed) before allowing it to fly any distance.

If you have a lot of feathers to replace on a very tame easy-going bird (when anaesthetic is not being used) it might be worth just doing two or three at a time, to let the bird get used to the effect in a more gradual way. In an emergency situation (where someone has clipped a young bird and it is vital due to the bird’s developmental stage for flight learning) you can use donor feathers from unrelated species, but it is preferable to get the right ones if you can.
I run a free feather donating service for avian vets. Anyone who needs donor feathers to repair their birds’ wings can contact me: I usually have feathers from most ‘pet’ bird species available at no cost. I also need people to donate any unwanted feathers (mainly primaries) which should be in good condition.

Greg Glendell
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BirdsFirst, UK
Tel. 0870 757 2381.