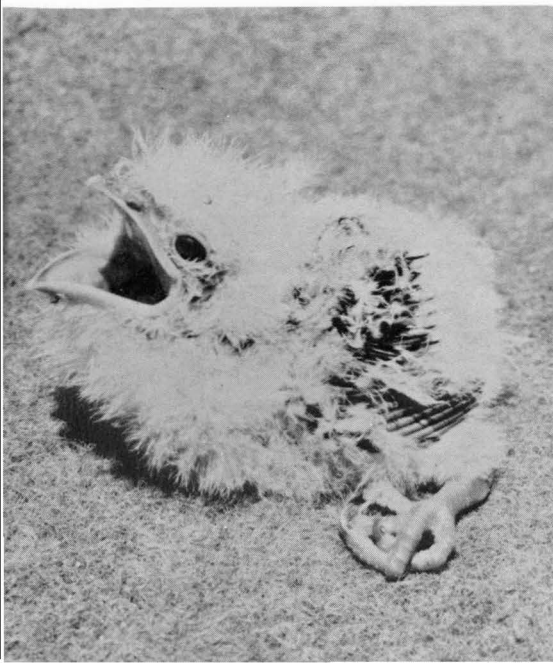


Progress of a hand reared Twany Frogmouth, from hatching to fledgling.

STORY AND PHOTOGRAPHS BY  
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## raising altricial birds



The most common young birds that are hand-raised fall in the category of precocial birds. Such birds are the pheasants and chickens, where once started on food can readily feed themselves. But rarely does one have the chance to hand-raise altricial birds. This is the type of bird that is hatched completely helpless. Most are blind and without feathers. The altricial bird has complete reliance on its parents while it grows into an adult. Trying to hand-raise this type of bird takes a great deal of time and patience. One of the greatest difficulties is knowing what to feed the helpless young chick and trying to match its diet to what it would get in the wild state.

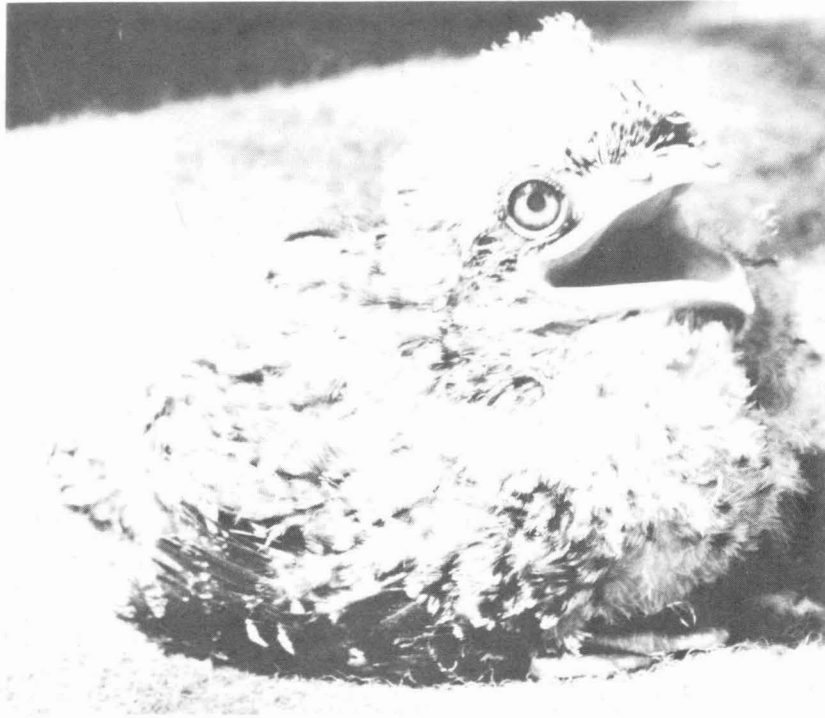
The bird keepers at the Los Angeles Zoo have had the privilege in hand-raising four different species of altricial birds over the past few years. They include: Roadrunner, *Geococcyx californianus*; Kookaburra, *Dacelo novaeguineae*; Twany Frogmouth, *Podargus strigoides strigoides*; and the Pale-mandibled Aracari, *Pteroglossus erythopygius*. At the beginning a basic approach was used in feeding these birds, but gradually from experience it was changed to meet the needs of the individual species. One thing above all was learned and that was to keep trying different food items and different methods and never get discouraged. We admittedly had failures especially with the Roadrunners, but one can only learn by observation and from one's mistakes.

The hatched bird was acquired in several different ways. Roadrunner and Kookaburra eggs were incubated in artificial incubators (Humidaire). One group Roadrunner eggs were incubated under the adult for nine days and then removed to the incubator. The first group of Roadrunners consisted of 27 birds in several stages of growth up to 10 days. They were being studied at UCLA for research

before we acquired them. We lost 26 of them. Several had congenital problems internally. This was a discouraging start for us. One of the Frogmouth eggs was artificially incubated and hatched, but recently it seems best to leave the eggs under the parent bird until the last day before it is due to hatch and then removed to the incubator. This gives us a stronger chick and keeps the adults from eating the young. All of the Pale-mandibled Aracari chicks have been incubated under the parent birds, but our pair does not seem to want or know how to rear them. All of the newly hatched chicks have been thrown out of the nest to the ground. The fall is 17 feet and surprisingly we have been lucky on finding several of the chicks before they could get too cold. It is hard to believe that no internal damage was done.

Two methods for brooding the chicks have been used. One is to place them in a non-rocking incubator (Lyons) with a temperature starting at 95° and dropping five degrees every week or two as needed. The other method is to use a heating pad beneath the small nest and keeping the internal nest temperature at the above recommended temperatures. The outside temperatures were about ten degrees cooler. With this method the nest was kept inside at room temperature. The heating pad simulated the brood patch of the adult bird. The plastic containers that strawberries can be found in, in the market, were used for nests. Temperatures could penetrate the nest easily. One of the most important things to do is to place out twigs of appropriate size within the nest at all times until the bird is on a perch. Some of the first birds we raised had bad foot problems because they were placed on a flat nest. The feet develop correctly when they have a chance to curl around the twigs. The twigs are changed frequently because they get fouled. The main problem we found with temperatures is that the young bird is apt to dehydrate easily when left in an incubator brooder situation. One of the methods now used is to leave the young chick inside the incubator brooder for only the first week and then using the heating pad method thereafter.

Diet is a very important subject. Throughout all the different types of food given we have come back to feeding baby mice for the main diet. We have tried other types of diet such as Gaines Dog pellets. We fed the first Aracari (1974) almost completely on this diet but continuously had problems. They consisted of both impaction and dehy-



dration. It died at 26 days after a major struggle. A disappointment to say the least as this was probably one of the first hand-reading attempts of a bird in the Toucan family. Success came in 1975 though. We raised two Pale-mandibled Aracari's to adults on a main diet of baby mice supplemented with the soft portions of grapes and bananas to keep the moisture and sugar content at a high level. Later after approximately 8 weeks, mynah bird and dog pellets were gradually introduced. They were first fed inside of a small grape. The other altricial birds are, while young now, fed the main diet of baby mice and supplemented with insect bodies and now and then a soft dog pellet. We found it was not wise to change the diet drastically at any one time. As the chicks grew into adulthood, we increased the size of the mouse. They were getting two whole adult mice at the end of the actual hand-feeding period. A vitamin powder supplement was added once a day and several cc of water was added at each feeding. We once were feeding every half hour, but we have been having better success with feedings no less than one hour apart during the first week graduating it to two to three hours apart. Just remember that whatever method works for you is the right one.

I must give a lot of credit to my colleague John Tobin who has shown great patience, perserverence, and knowledge while working on this project with me at the zoo.

One of the most interesting and en-

joyable birds we have raised in this group is the Tawny Frogmouth. When first hatched the chick is covered with fine hair-like white feathers. They completely covered its eyes. I was in the unique position to photograph the growth sequence of this bird in which you can see a remarkable development. Even at a young age this bird went into the frozen defense position as does the adult. The adults often are not seen in their exhibit for they will stay motionless most of the day. It has a resemblance of an old weather beaten log. Its feather pattern matches the look of molted and streaked bark. When frightened they will freeze into a rigid upright position and in this way will appear as a broken tree limb.

There are 12 species of Frogmouth found from India to Australia. The tawny frogmouth exhibited at the Zoo is found from southeastern Queensland to New South Wales. They are mainly nocturnal and feed on small birds, mice, frogs, and insects. Early observers thought this bird caught insects in the air because of its large gaping yellow mouth. This may happen, but the majority of the time these birds will feed on the ground or on a branch.

We have just begun to scratch the surface on the knowledge that goes into the hand-raising of altricial birds. A happy moment for us was when a Tawny Frogmouth we had hand-raised was sent in exchange to the Bronx Zoo so they might have new stock for their group of Frogmouths. ■

