

## Experience with breeding the Silver-eared Mesia (*Leiothrix argenteauris*)

By Peter Karsten, December 2006



adult male silver-eared mesia



pair of s.-e. mesias

### Introduction:

The silver-eared mesia is closely related to a much better known avicultural subject, the Pekin robin (*Leiothrix lutea*). Both belong to the family Sylviidae and tribe Timaliini, the babblers. Babblers embrace a great diversity of genera with birds of many sizes, shapes and colors to the point where one taxonomist once remarked that this is a catch-all for species nobody could figure out where else to classify them. Widely distributed in Australasia and Africa, there is only one species in North America, the wren tit (*Chamaea fasciata*) and one in Europe, the bearded tit or reedling (*Panurus biarmicus*). The bearded tit is often kept and bred by European aviculturalists.



watercolour by P. Karsten



pair alloprenning



pekin robin

The range of mesias expands from the Himalayas to S. E. China, through Burma, Malaya, parts of Thailand, Anam, Tonkin and Laos to Sumatra. It is found above 3000 feet in the more tropical regions in shrub and forest habitats. There are

regional subspecies with some color variation and slight difference in body size. The red silver eared-Mesia (*L. a. laurinae*) from Sumatra is more colourful and larger than other subspecies. Mesias were frequently imported as cage birds until the import restrictions curtailed international trade. Mesias and pekin robins are listed in Appendix II of the Convention on International Trade in Endangered Species (CITES) since 1997.

Mesias are dimorphic and easy to sex. Mesias are very striking birds. Both sexes have the black crown, a small yellow tuft at the base of the upper mandible, a silvery-white cheek patch, a grey back, a rust-brown wing patch, yellow edged primaries and black tails with a yellow edge on the outer tail feathers. The male has an orange-red collar from the nape to the throat, which turns into olive buff color towards the underside, while the hen has a more yellow to buff color. The upper and lower tail coverts are reddish in the male and buff yellow in the hen, and juveniles already show this dimorphism in their tail coverts. Their song is louder and less melodic than that of the Pekin robin. Typically for babblers, hence the name, the birds utter constant contact calls. Silver-eared Mesias have a body length of about 7 inches (18 cm). Mesias are long-lived birds and longevities of 20 years are not uncommon.

### **Feeding.**

They are essentially insectivores, but also feed on fruit and other vegetable matters. My mesias had tendencies to defoliate stands of bamboo, particularly in the winter. I do not think they consumed much of it. In aviculture, mesias readily take to a commercial or custom-made softbill mix moistened with grated apples or carrots, orange juice, cottage cheese and hardboiled egg. I regularly offered them a home made egg cake, which they relish. A proven and tested softbill dry mix, moistened with grated carrots, apples, hardboiled eggs and cottage cheese had been offered as staple food. Live insects are eagerly taken. A variety of insects is needed to raised chicks. The author maintains cultures on 12 months basis to produce crickets, waxworms, mealworms and lesser meal worms (buffalos). *Detailed diet information and procedures to breed live insects are extensively covered by the author in his book, scheduled for publication in 2007. "Pekin Robins and small softbills: management and breeding" Hancock House Publishers Ltd., Surrey, B.C. Canada, ISBN 0-88839-606-6.*

## Housing and the Breeding Aviary



a breeding aviary with good understory



8 months old pair of mesais

Mesias are kept in single or mixed species aviaries. They are very competitive with other species and may dominate food stations. During the breeding season mesias will fight over territories and an established pair may easily kill other mesias. They may also become intolerant to their close relative, the pekin robin.

I have been told that they endure low temperatures and survived minus 10 to 15° C weather for several days. This is only possible because they are adapted to high elevation survival in the home range, however it would be foolish to establish endurance records with this tropical species, which is slowly and surely disappearing from avicultural collections, because of import restrictions and lack of captive breeding. I highly recommend that they always have access to a shelter, where their food and water does not freeze. They are hardy in outdoor aviaries at the west coast of British Columbia. I found that they choose outside sleeping roosts despite the availability of warmer shelter spaces, however as a precaution I lock the birds into a shelters when the temperature drops to 5 to 10° Celsius below freezing (22 – 15 ° F) for several days

Mesias are swift and curious birds and prone to escapes if the aviary does not have a safety porch. Even at that I attached bands of discarded rubber truck tires to the double entry doors so they shut behind me -all the time!

The most reliable way to breed mesias is to house one breeding pair by itself in a well-planted aviary. I would not offer them an aviary less than 6 feet by 9 feet and 8 feet high. The enclosure should have solid walls on three sides or at least half the sides to be solid, to create a horseshoe shaped quiet zone. Dense, preferably evergreen, planting should fill at least 1/3 of the volume and reach to the aviary ceiling. This is a reliable recipe to breed pekin robins and silver-eared mesias. I bred over 90 pekin robins since 1999 and have distributed some 35 pairs to various people. Only those who provided a sufficiently large, well-planted aviary for a single pair had some reproductive success. In most cases the failure to provide adequate planting to allow the birds to hide their nest and the co-housing with others bird species in the same aviary to “use all that space “ lead to the lack of breeding success.

I bred them regularly in outdoor aviaries, but see no reason why this could not be done indoors, provided a comparable environment and seasonal daylight and temperature changes are mimicked. Outdoor aviaries are easily planted with evergreens. Soft-needled conifers such as cedar and fir, or bamboo are ideal choices. They are best planted in natural soil, but sufficient barriers must be established in areas prone to rat invasion. A birdbath, fed by a flowerbed irrigation line, to provide dripping water is ideal. It sustains fresh water and waters the plants by moving it around. Mesh wire can have up to ½ by ½ inch (12 x 12 mm) openings. Ideally the aviary is connected to a second space, such as a shelter or even a service corridor to allow the keeper to shift the adults out of the aviary to band the chicks in the nest. The roof can have mesh wire with frames strong enough to withstand heavy snow loads, where they occur. I place second-hand tempered patio door glass panes on at least half of the roof area to protect the nest and birds from inclement weather.

### **Breeding**



start of nest with raffia



male feeding 3 day old chicks



5 to 6 day old at banding

Silver-eared mesias are not difficult to breed in my experience. I set up 3 adult pairs and one juvenile pair for breeding in 2001, 2004, 2005 and 2006. Every pairs raised chicks, except the juvenile pair, because it was sold in the spring 2006 at a time when they where starting to build their nest. Mesias are eager nesters, but the success rate of bringing up chicks to independence is lower than that of pekin robins in my experience. 37.4 % of all eggs laid by pekin robins in a seven year period resulted in offspring raised to independence, while mesias raised less than 15 %.

Losses related mainly to frequent abandonment of chicks by the adults due to disturbance and at times unexplained behaviour.

Mesias can be bred with essentially the same management regimes as Pekin robins. The provision of about 10 inch long raffia strands and coconut fibres is important to initiate nesting and for the successful construction of a nest. Nest supports are less critical with mesias than with pekin robins. Mesias may build a nest in just 2 to 3 days and often in one day, specially if they move a nest from one place to another by reusing practically all of the nesting material of their previous nest. Mesia reuse the same nest less often than pekin robins. Breeding

pairs, and males in particular, seem to be less tolerant to disturbances. Scolding and warning calls are emitted more frequently and more extensively than by pekin robins. This raucous commotion can interfere with the nesting of pekin robins close by. In my experience, the adults seem to be more irritable when nesting and more prone to abandon the chicks due to disturbance. Banding has been problematic and should not be attempted unless the chicks are at least 6 days old. Even then the adults may detect the leg band and make determined attempts to remove it from the nest - chick attached. A security camera revealed that the adults are constantly cleaning the nest from any undesirable objects. Males become more agitated if something is out of order and are the first to stop feeding the chicks. While the hen may continue to incubate eggs or feed chicks, his behaviour influences the hen and she will abandon the nest within a day or two as well. Direct staring at the birds at or on the nest, which clearly irritates them, should be avoided. I remove the chicks for hand rearing if they are bound to fail in the nest.

### Feeding chicks



11 days old, note nest support



13 days old fledged chick

Live insects must be of good quality and variety while chicks are reared by the parents or by hand. Crickets, waxworms, lesser mealworms (Buffalos) and mealworms are all accepted by mesias and passed to their chicks. The nutrient imbalance of calcium related to phosphorus in the insects, and in particular in mealworms, needs special attention or rickets and early losses of hatchlings are sure to occur. The Ca:P ratio should be 2:1 or at least 1.5:1; mealworms have an inverted 1:16 and higher ratio. Crickets are the best of the lot with an approximate 1:7 ratio, however still unfavourable. To mitigate deficiencies, Ca and vitamin D must be added to the insects before offering them to the adults. Mesias "slam" live insects against a perch or hard surface to kill them and to remove legs and wings, which removes "dusted on" supplements. To reduce the problem, the insects can be coated with a minute amount of margarine or vegetable oil. I have even gone as far as to inject liquid mineral/vitamin supplement into waxworms to deal with acute problems. I also mix supplement

with honey to cause the waxworms to ingest it. Any of these methods or the combination thereof has eliminated chick losses.

### **Closed banding chicks**

Silver-eared Mesia chicks have sturdier leg bones than Pekin robins and waiting past day 10 with closed banding will be difficult.

The appropriate closed leg band is size K with of a 5/32 inch or 3.94 mm inside diameter. The one step smaller J size bands could be used before day 5, but banding the chicks at that stage, when the pinfeathers and down have not developed to help hide the leg band is very risky. Mesias will not tolerate foreign objects in the nest and will make every effort to remove the band from the chick or pull the chick out the nest by the band. This usually leads to the loss of the chick unless it is taken away for hand rearing.



perch-feeders 16 days old



2 hand-reared chicks



40 day old juv. male showing red

Hand rearing can be done with good success once the chicks are 5 days old or older. They fledge earlier, at about 10 days, and feed on their own week sooner than under parental care. Perch feeders, made by the author from cloth pins and I bottle caps, help to entice chicks to feed on their own within days after fledging.

### **Summary of multiple nesting by 3 different pairs as extracted from diary entries .**

#### **Pair 1 in 2001**

March 29 received pair on breeding loan

April 1 noted that female had hind toe trapped in L size leg band

6 male carried coconut fibre

7 to 22 nest construction; starting with raffia and lining with coconut fibre

26 first egg

27 second egg; adults incubating alternately

28 3<sup>rd</sup> egg laid

May 3 hen has toe trapped in leg band again

11 hatched 2 chicks and one egg still in nest with full term embryo

15 male appears nervous and unfocused in feeding.

- 16 168 insects fed to parents during 24 hour period
- 17 two chicks thrown out, egg with embryo still in nest
- 22 nest reworked by male and female
- 30 three eggs in nest, adults incubating
- June 12 first chick hatched at noon
- 19 banded 3 chicks with AACC "K" closed bands
- 20 one small chick thrown out with leg band pulled off its leg
- 21 remaining 2 chicks taken in for hand rearing, 14 g each
- 26 reworking nest
- 28 nest completed
- 30 two eggs in nest, incubation started
- July 13 three chicks hatched
- 21 eyes open, lots of pin feathers,
- 23 chicks have black cap and white cheeks
- 26 fledged three chicks
- 28 smallest chick found dead with caked vent
- 29 second chick found dead with caked vent
- 31 remaining chick active and fed regularly by adults
- Aug. 4 reworked nest
- 6 Fledged chick sleeps a lot, temp. only 11° C
- 8 one egg in nest
- 9 two eggs in nest, incubation started
- 10 three eggs
- 23 chicks hatched, adults are feeding
- 24 fledged chick (41 days old) showing first red chest feathers
- 24 hatched chicks were abandoned, 3.3 g av., removed for hand rearing
- 25 abandoned chicks, regurgitated food and died later in day
- 30 47-day old chick still begs for food and the male is still feeding it.

The pair and their independent juvenile male were returned to the owner on September 8, 2001.

Observations: this pair reused their nest which has not been done by other pairs. This could favour build-up of pathogens, resulting in vulnerability for infections and subsequent losses of nestlings. The nest was built in a shelter space attached to habitat aviary. The feeding station was in the shelter and disturbance plus lack of seclusion may have contributed to throwing out chicks. The leg band of the breeding hen was eventually cut and removed. It had also slipped over the upper metatarsus joint.

The insects offered were waxworms, crickets and mealworms. Freshly shed ("white") mealworms were used as much as possible. Mineral supplement ("Pime", a Hagen product) was dusted on the food insects regularly. In future year breeding, the supplement was fed to waxworms and margarine coating was

used to stick the supplement to the waxworms and meal worms. Vitamin /mineral deficiency may have played a role in failed chick survival in 2001.

### **Pair 2 in 2004**

This pair was acquired in November 2003. It had produced one offspring with David L. Bender in 2003, at Hancock Wildlife Center, Surrey, B. C. This is the only successful breeding of silver-eared mesias I am aware of in the last two decades in Canada.

The pair was housed by itself in a well-planted aviary 7 (w) x 9 (l) x 7 (h)

April 12 first nesting behaviour

23 nest completed

28 eggs laid and incubation started

May 11 two chicks hatched

15 chicks thrown out, 4.8 g average weight

18 reworked nest

June 4 three eggs

13 two chicks hatched

18 banded both chicks

20 one chicks dead on ground apparently pulled out of nest by leg band

20 remaining chick removed for hand rearing

25 adults carrying raffia for a new nest

26 hand reared chick fledged (18.1g)

July 1 nest lining completed

6 chick now 23 days old and 22.7 g (# 04-1 male)

8 one egg in nest

12 two eggs and incubating

15 installed security camera to monitor nest activities

18 two chicks hatched

24 adults are nervous feeding cautiously

25 chicks are begging and calling a lot

27 removed tow chicks (17.7 and 14.9 (g) for hand rearing

30 two chicks fledged (#04-2 female and #04-3 male)

31 finished new nest

Aug. 3 one egg

4 two eggs

17 two chicks hatched

26 chicks unfurling pinfeathers

29 two chicks fledged

31 two chicks fly well and roost high on branches

Sept. 1 smaller chick removed for hand rearing (20.0 g)

5 larger chick is very active in aviary with parents

8 larger chick found dead, only 7.2 g, had signs of enteritis

17 smaller chick feeding on its own

21 showing first red chest feathers, 35 days old (04-4 male)

**Observation:**

Banding of chicks in the nest is problematic.

Mesias are much less resilient to cope with lack of food or water. Two independent birds were lost by accidentally shutting one into a safety area for 24 hours and another by forgetting to push in the wall-mounted food tray so the bird could have access to the food. They were without food for only one day. The hen died and the male barely survived, but recovered within 2 hours after feeding. Pekin robins, which have been accidentally locked away from their food for 24 hours, survived without problems. The lost mesias had good body weight. I know of two other events where mesias were lost within 24 hours due to lack of food and or water. This observation is critical.

**Pair 3 in 2005**

October 29<sup>th</sup>, 2004: acquired pair number 3. It had been held in a mixed species aviary by the previous owner for about 10 years and had no successful breeding during that time. The pair was moved into a well-planted 12 (w) x 20 (l) x 12 (h) foot aviary and cohabitated with 1.2 coal tits, 1.1 linnets, 1.1 chaffinches. The coal tits were removed when competition over live insects for the mesias to rear their chicks became a problem.

March 5 carrying nesting material

10 intense nest building

16 incubating

30 one chick and one egg on aviary floor (roof repair done on aviary)

April 1 hen carried nest material

15 adults incubating

20 2 eggs with about 3 day old embryos inside found on aviary floor

28 2 eggs in nest , incubating

May 8 found 3 egg thrown out, embryos were full term

May 12 building new nest by moving all nest material to the new site in bamboo

13 moved nest material again to a different site in a cedar

15 two eggs again, incubating solid, third egg expected the following day

28 one chick hatched

29 only one chick in nest and two eggs

June 5 banded chick

7 chick jumped out of nest, adults not focussed on feeding it. Removed.

9 removed chick feeds well 16. 5 g, gaining 1 g per day, but died June 11.

10 adults completed new nest

24 four eggs seen in nest

27 one chick hatched

July 8 chick fledged moving well throughout the aviary with adults

- 11 working on new nest
- 13 chick flew into window startled by a hawk and broke its neck.
- 15 working on a new nest
- 18 incubation started
- 31 two chicks hatched
- Aug. 8 banded two chicks, hen not brooding at nights
- 11 two chicks fledged 7:30 am
- 12 male carried nesting material
- 20 two chicks very active
- 24 one chick found dead at door which has a window, sibling is fine
- Sept.13 two chicks fledged from undetected nest
- 14 removed the 44 day-old sibling, adults are feeding fledged chicks well
- 15 removed smaller chick, it seemed weak and could not fly up (15 g)
- 17 the removed chick recovered well (muscle burn out?) 16.2 g
- 22 reintroduced removed chick to adults and its equal-aged sibling.
- 30 all chicks are independent

Observation:

Fledged chicks can be removed for supportive care and later reintroduced to the adults and siblings. Mesias have an explosive reaction to birds of prey and will fly heedlessly into windows, even if these have been "blinded" with paint. An effective way to prevent impact trauma is the placement of dense hemlock fir branches in front of windows. The needles will fall off but the filigree of the fine branches remains to stop glass impact injuries. No further birds have been observed hitting glass panes after the installation. Muscle burn out is a problem with fledged chicks. Overexertion by trying to fly up from the ground causes muscle burn out and shock. The aviary must have underbrush to allow chicks to work their way up to hide and rest.

The pair #3 would have raised 5 chicks in 2005 with proper protection from window impact trauma.

**Summary**

The author maintained 3 different adult pairs of silver-eared mesias in 2001, 2004 and 2005. During that time 8 offspring were raised to independence. While the adults are long-lived birds, easy to maintain and hardy with respect to temperate climate conditions, the breeding success is less predictable than with their more easy-going, close cousin, the pekin robin. Well planted aviaries, dedicated to only one breeding pair offer best opportunities to breed mesias. A variety of gut loaded or prepared insects is critical to raise healthy chicks. Crickets are the primary choice of the author.

The author is no longer maintaining or breeding silver-eared mesais in order to concentrate resources for the breeding colony of pekin robins. The mesias have been transferred to Martin Vaillancourt.

MS to Avicultural Advancement Council of Canada

If any reader has silver-eared mesias or knows of mesias, which could be integrated into a species recovery effort in Canada, I would very much recommend that Martin Vaillancourt, St. Ann, Ontario, phone: 905 957 6690, E-mail [garrulax@hotmail.com](mailto:garrulax@hotmail.com), is contacted to explore options on how to bring the last remaining mesias in Canada into a breeding program.

#### References

Karsten. P , 2007, "*Pekin Robins and small softbills: management and breeding*" Hancock House Publishers Ltd., Surrey, B.C. Canada, ISBN 0-88839-606-6.

King, B. et al, 1975, "*Birds of South-East Asia*", Harper Collins Publishers, London